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SANITATION VERSUS MATERIA MEDICA.

THE science of prevention has been a greater and more effectual factor in human progress than has the science of cure.

This is a truism, and in fact an axiom which hardly admits of debate, because it is an obvious proposition.

For centuries the doctor with his philosophy of cure has been basking in the limelight of tradition. Time was when men looked wholly and exclusively to the advice and service which the exponents of materia medica could offer in the alleviation of the miseries brought on by the diseases to which the human organism is heir.

But with the diffusion of knowledge during the centuries the prerogative of the physician has been curtailed to a very substantial extent, for today intelligent men seek rather the means of prevention of suffering than its cure.

The science of prevention, as exemplified by the services which are being rendered by the master plumbers of the nation, has become a well-nigh dominant factor in the field of preventive medicine, and today many look upon it as the coming profession while the province of the doctor is viewed as the vanishing profession.

A few figures from the mortality records of leading cities will satisfactorily prove the truth of the statement that the services rendered by the disciples of practical sanitation have been mighty factors in the realm of preventive medicine.

In New York City, thirty-one years ago, the mortality rate was 27.5 as compared to 14.1 in 1912. In Chicago for the same period it was 21.5, as compared to 14.8 in 1912. In Philadelphia the rate was 22.3 in 1881 and 15.1 in 1912, and in Boston 24.7 in 1881 and 16.2 in 1912.

That other agencies such as food inspection and better housing conditions have contributed to this decrease in the death rate, cannot be controverted, but the factor which stands at the head of this list of death-preventing agencies has been the installation of sanitary plumbing in all its phases and the enforcement of the laws thereof.

We might consider the era—from 1885 to 1915 as that which has marked the creation of better sanitary facilities in Chicago, and the progressive enforcement of sanitary regulations in that city. That these have been health-conserving factors appears fully obvious.

In a large sense, Chicago was the pioneer in the spread of the gospel of practical sanitation. After the first plumbing code was drafted by Andrew Young, the city's first plumbing inspector, who was assisted in drafting the code by various of his colleagues in the plumbing profession, many western cities copied it and drew inspiration therefrom. Many have called Mr. Young, the "Father of Home Sanitation," and to him much credit is due for his labors to conserve the health of Chicago.

Dr. E. R. Pritchard, secretary of the local department of health, in commending the work of the master plumber in promoting the decrease in the mortality rate, said recently:

"Unquestionably since the beginning of sanitary plumbing the death rate has materially decreased. It has played a dominant part along with the other agencies which have helped to decrease the annual death rate throughout the nation."

On page 19 of this number is a cartoon by one of "Domestic Engineering's" staff artists. Here the reader will observe Dr. Medicus making way for Dr. Plumber, and remarking: "A case for you Dr. Plumber. What they need is sanitary plumbing."

Local Venting of Plumbing Fixtures

Local Ventilation of Water Closets and Urinals Described and Illustrated in Detail

By JOSEPH GRAHAM

A LOCAL or surface vent is a pipe by which the foul air in bowls or water closets or other plumbing fixtures is removed. In the case of a water closet this is also called a "seat" vent.

What is of primary importance in the ventilation of toilet rooms is the expeditious removal of the vitiated atmosphere, which is accomplished by exhausting the air from a point near the source of contamination; fresh air being supplied for ventilation from outside or other portions of the building.

The exhaust method of ventilation has proven satisfactory because, when connected with some device for creating a positive upward or outward movement of air, it prevents the escape of disagreeable odors to other portions of the building and insures a pure atmosphere in the toilet room.

Water closets were formerly vented by means of a 2-inch metal pipe extended from the bowl to the wall. This method is objectionable because the connection between the earthenware horn and the metal pipe is apt to get loose and leak at each flushing of the closet. The size of the vent is also too small. Another objection to such an installation is that the contents of the bowl is apt to back up through the opening into the ventilating duct, in case the outlet of the bowl is stopped up, since it is lower than the top of the closet.

A method successfully employed in present practice is the use of closets with a large central hump vent.

The local vent should be connected direct to a separate vent duct.

Various methods are employed to secure a continuous upward and outward movement of air through the closet vent.

Where a heated flue can be obtained, the vent duct is connected with it above the highest opening, or run up alongside of it.

Where it is impossible to obtain a heated flue, the vent shaft is sometimes capped with a ventilator, or a steam coil or gas jet is located near the bottom of the shaft, by means of which upward currents of air are produced.

A common method in large toilet rooms in hotels, factories, public buildings, etc., is the employment of an exhaust fan located at the top of the duct.

The employment of the closet with the central hump vent does away with the objections to the old vent horn, since the lower part of the outlet of the vent is above the top of the closet bowl.

The application of the raised rear vent to different types of water closets is shown in Figs. 1, 2 and 3. The vent is of large size, having an inside diameter of 4 inches, and is so constructed that the vent is above the rim of the closet.

The type of closet used in the Pittsburgh schools with raised rear vent connection is shown in Fig. 4. The raised rear vent connection is 16 square inches in area.

A typical plan and section of a pupils' closet installed in the Boston schools, which gives a clear idea of the local vent, is shown in Fig. 5.

In buildings where a series of apartments are located directly over each other there should be a main local ventilation pipe running vertically up through the building and connecting with an exhaust fan, or into a chimney at a point above all other openings into chimney, the branch local vent pipe from each water closet should connect separately and independently with the main line, and at each connection the main line should be sufficiently increased in area so as to equal the combined areas of all the branch pipes entering it.

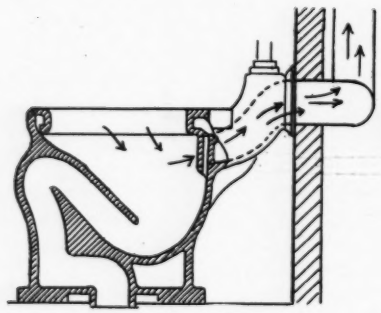


Fig. 1.—Raised Rear Vent as Applied to the Washdown Syphon Water Closet.

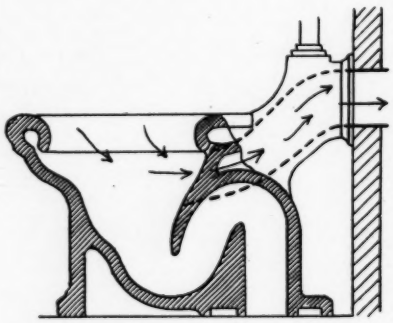


Fig. 2.—Raised Rear Vent as Applied to the Washdown Water Closet.

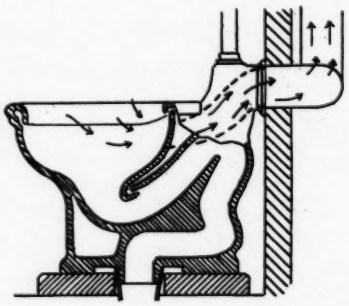


Fig. 3.—Raised Rear Vent as Applied to the Syphon Jet Closet.

The plan and elevation of the toilets in a six-story factory building are shown in Figs. 6 and 7. The manner of locally venting the closets is graphically shown, positive air removal being accomplished by means of an exhaust fan.

The boys' toilet room of the Logan School, Columbia, S. C., is shown in Fig. 8. In this case the water closet fixtures are placed back to back, the vent space being connected with a 15 inch diameter galvanized duct, connected with a fan and ½ horsepower motor, which exhausts the air from the chamber and discharges it into a brick flue through the roof. The ventilating fan in the toilet is not operated except when the fixtures are in use. The type of closet installed in this school is shown in Fig. 9. The

bowls have a large raised rear vent, with the entire effective vent area above the flush rim.

Vent ducts should be of sufficient size. A single closet should have a vent passage as large as that in the bowl,

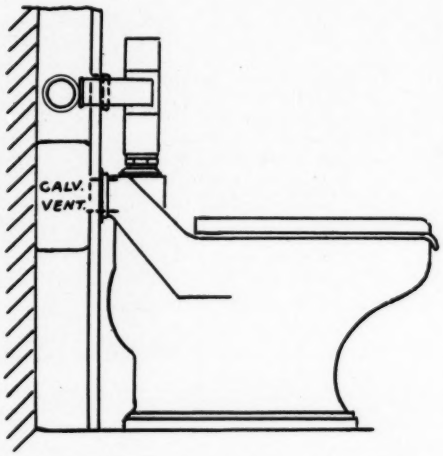


Fig. 4.—Type of Syphon Jet Closet as Installed in Pittsburg Schools.

the area of the duct being increased in proportion as other fixtures are added.

The usual material for the local vent is galvanized sheet iron, No. 26 or 28, except that the local vent connection from the closet to the wall should be made with a short nickel-plated brass tube, copper, or other non-corroding material, provided with adjustable flanges. Where galvanized sheet iron is used the joints and seams should be riveted and soldered or made air tight in some other manner. Other material is, however, employed for the local vent, such as cast iron, copper, or tile pipe.

Nineteen cities require the use of the local vent, as follows: Washington, D. C.; Ashtabula, O.; Binghamton, N. Y.; New Haven, Conn.; Waterville, Me.; and 14 cities in Massachusetts.

The following cities require the use of local vents where water closets are placed in an unventilated room or compartment: Chicopee, Everett, Haverhill, Springfield, Mass.; Dayton, O.; Duluth, Minn.; Des Moines and Sioux City, Ia.; Spokane, Wash., and Syracuse, N. Y.

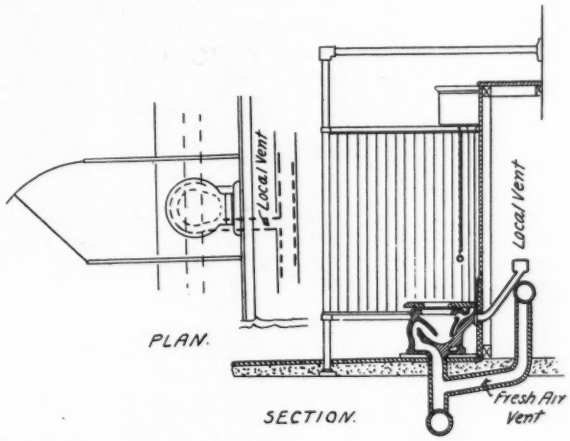


Fig. 5.—Typical Plan and Section of Closet Installation in Boston Schools.

Some cities define the manner of installing local vents, but do not make their use compulsory. These cities are: Corning, Glens Falls, Port Jervis, Poughkeepsie and Rochester, N. Y.; Manchester and Portsmouth, N. H.; Gloucester and Jersey City, N. J.; New Orleans, La.; San Antonio, Tex.; Louisville, Ky.; and Akron, O.

Framingham, Mass., recommends the use of local vents, but does not require them.

Another method employed in locally ventilating a water closet is shown in Fig. 10. The motive power of this device, which consists of a ventilator, is a small jet of water,

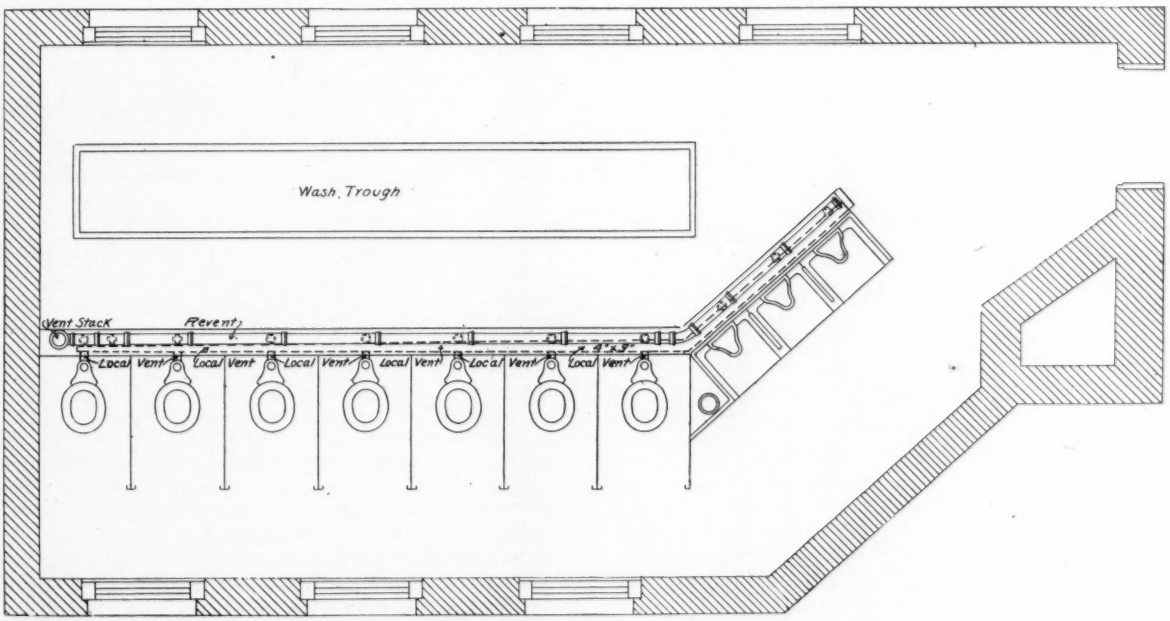


Fig. 6.—Plan of Toilet Installation in a Six-Story Factory Building.

controlled by a valve handle. The jet of water, which is taken from the supply pipe of the tank, starts as soon as the valve handle is raised. It proceeds through the

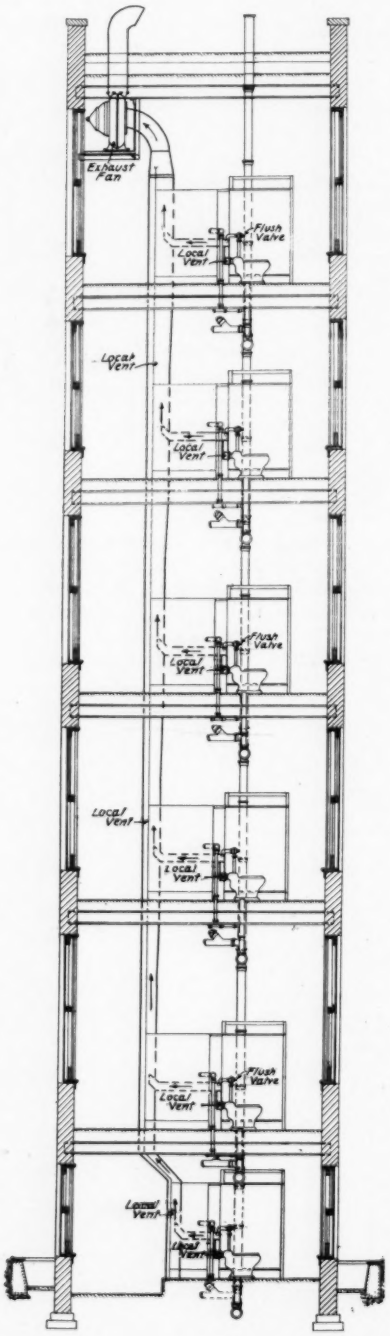


Fig. 7.—Sectional View of Toilet Installations in a Six-Story Factory Building.

valve and by way of the outlet pipe to the aspirator. At this point, the aspirator nozzle utilizes its velocity to create a vacuum. The vacuum so produced draws the foul air through the suction pipe and forces it out through the discharge pipe into the open air. The ventilator will work

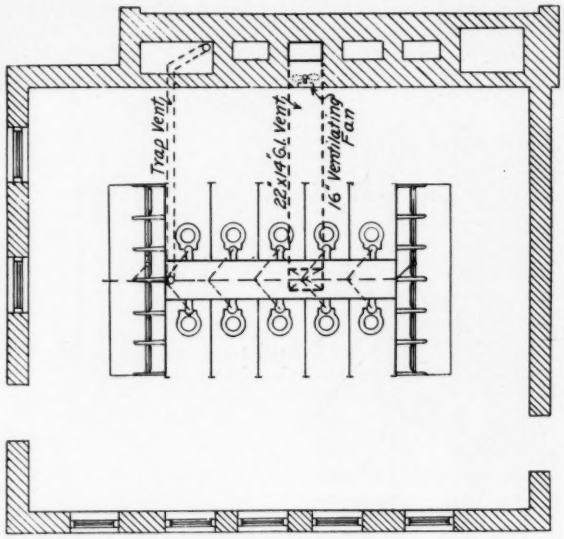


Fig. 8.—Plan of Boys' Toilet Room in Logan School, Columbia, S. C.

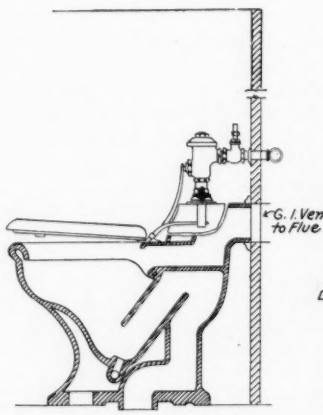


Fig. 9.—Type of Closet Installation in Logan School, Columbia, S. C.

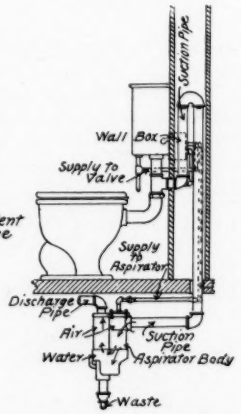


Fig. 10.—Type of Water Closet with Local Ventilator.

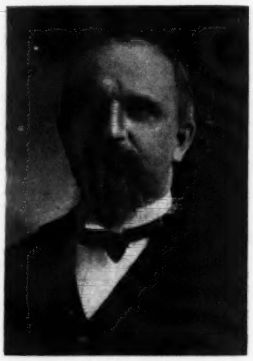
on a water pressure of 25 pounds to the square inch. The aspirator can be placed either below or above the closet fixture.

(To be continued.)

At Lexington, Ky., the master plumbers are preparing to test the legality of the recently enacted plumbing code, which was adopted by the City Commissioners. This code is modeled after the Ohio laws, and also conforms with the state laws in Kentucky. J. J. Fitzgerald, a leading plumber of Lexington, will probably be one of the leaders in the fight against the ordinance, and James Richard Bush, a local attorney, has been employed to represent the plumbers. The master plumbers maintain that the code is unconstitutional, and favors the journeyman plumber. The new ordinance brings the plumbing regulations of Lexington up to practically the same standard as those of Louisville, where the plumbers operate under both state and city laws. At the last meeting of the Kentucky Legislature the state law was passed, affecting only cities of the first class, therefore, eliminating all cities but Louisville.

How to Run Piping for Steam Radiators

By W. H. Wakeman



W. H. Wakeman.

AS ALL steam radiators do not render satisfactory service, and as there is always a reason for every failure, a few suggestions along this line seem to be called for, as we naturally suppose that if a steamfitter does not arrange piping so that the results secured from it in service are satisfactory, he does not know how to do it. I am well aware of the fact that competition in this work is very great in some places, hence if one bidder figures on the cost of a first-class job, somebody else will contrive a way to omit details that cost something, hence he gets the job, when the next highest bidder really has calculated on putting more into the contract than is represented by the difference between his price and the lowest submitted. Perhaps this will be understood better at some time in the future than it is at the present, but until that much desired time arrives the man who furnishes second class material, and none too much of it, will secure a great deal more than his share of business.

The illustration, Fig. 1, shows a steam radiator on a shop floor, with all connecting pipes. The main steam supply pipe, "2," pitches as indicated by the arrow. A cross is connected at this point, into which all water resulting from the condensation of steam naturally falls, leaving only dry steam to pass into the riser, through the angle valve and into the radiator. A small quantity of steam will be condensed in the riser, but this will quietly fall back into the cross, as the current of steam passing upward is not strong enough to carry water with it.

The angle valve, "4," should always be close to the radiator. I have seen them located about 2 feet apart, with a bent pipe between them, in which water accumulated until steam pushed it out. The result was a series of very disagreeable thumps and pounds, that should not be tolerated. Care must be taken to set the radiator so that it will pitch towards the drip pipe, in order that it may drain quietly. So much trouble has been caused by valves on the outlets of radiators that their use ought to be discontinued, unless there is a special reason for using one. Dozens of times have I been called to a distant part of the plant to stop a leak in a radiator, only to find that the drip, or outlet valve, had been closed, and the inlet left wide open. Of course, water had collected in the radiator, the air valve was opened by the contraction which followed the absence of the usual heat, hence water was running out on the floor. I am quite sure that if no valve is used at this point this trouble will be eliminated. An air valve that is operated by flotation instead of contraction and expansion, would be an improvement, but in many cases water will come out of the stuffing box, around the valve stem, because the packing is hard, and consequently contracts until it is just as bad as the kind of air valve mentioned.

If a tee is used at "5" and an air valve connected into it, as shown, water cannot reach it, and it will readily allow air to escape. A check valve, "6," prevents steam from backing up into the radiator, from the main return pipe, "7," when "4" is closed. As pressure is practically equalized in such a system we must depend on the weight of a column of water standing in the drip pipe to open "6," hence it must be far enough below the floor to prevent this water from rising into the radiator. I would never have it less than 12 inches, providing it was practical to so locate it. I have found it necessary to remodel many drip pipes in which the check valve was only one or two inches below the radiator. I admit that it will sometimes work all right, but it cannot be guaranteed, while the arrangement shown will always give satisfaction.

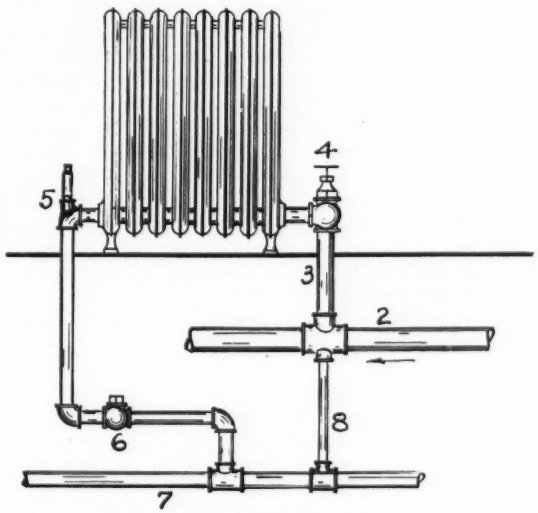


Fig. 1.—Sketch Showing Piping for Steam Radiator.

The drip pipe, "8," takes all water out of the cross and delivers it into the main return pipe. Objection is sometimes made to this pipe, because it apparently allows steam to pass directly into "7" without going through the radiator. This idea is not wholly correct, because there is no flow of steam at all through the system (after it is once filled), except as a portion is condensed, and other steam comes in to occupy the space. Nothing is lost, because all of these pipes constitute heating surface that warms the building. If "8" is too large and "2" is not large enough to furnish a full supply, it may prevent the radiator from getting enough steam to render satisfactory service, but it does not allow steam to run to waste. Of course, it is assumed that "7" discharges into a good trap, a receiver from which a pump takes the water, or directly into the boiler, provided it is a gravity return system, carrying either high or low pressure.

Rome, N. Y.—O'Shea & Larkin, of 229 West Dominick Street, whose plumbing and heating establishment was recently destroyed by fire, would like to receive catalogues from manufacturers and jobbers of plumbing and heating goods.

Recent Test of Cast-Iron Downdraft Boiler

Detailed Description of Test of Cast-Iron Sectional Downdraft Heating Boiler*

By C. A. FULLER

THE present condition of the coal market and apparent decrease in the anthracite coal supply, has produced a demand for boilers and appliances which will satisfactorily burn bituminous coal and at the same time pass the rather rigid city requirements in reference to smoke nuisance. This demand has been practically fulfilled for several years on power boilers by means of the Dutch oven type of furnace, which, by reason of its incandescent fire-brick arch, practically consumes all unburned carbon in the gases before the same reaches the comparatively cold tubes or shell of the boiler.

The low-pressure heating boiler manufacturers, both steel and cast iron, have been rapidly falling into line by putting on the market the so-called down-draft smokeless boiler. The various types of these boilers are all constructed along similar lines. In addition to the regular set of grates there is an upper set of water grates upon which bituminous coal is burned. The hot gases from the burning coal must pass down through the hot bed of coal instead of up through the colder bed, as in the regular type, and in this passage through the bed of live coals, the unburned carbon is entirely consumed before reaching the parts of the boiler.

This test, the results of which are given below on a Peerless down-draft, cast-iron sectional boiler, was made not only to determine its efficiency, rate of evaporation, rating, etc., but also to determine, in a general way, its smoke consuming capacity.

A 4-inch steam main from the boiler was carried through a steam separator constructed of 10-inch pipe and elbows, and then discharged directly to the atmosphere. The water was fed to the boiler through two barrels, both placed above the water line of the boiler. The water was first drawn from the city main to the upper barrel, where it was carefully weighed. It then flowed by gravity to the second barrel, and from there to the boiler. The temperature of this water was also accurately determined.

The firing door of the upper grate was kept open continuously, so that the boiler was running at full load capacity throughout the entire test.

The boiler had been running with a slow wood fire for several hours before the test was started, and was brought up to full capacity for two hours before readings were begun. The thickness and general condition of the fire was carefully observed at the time of starting. The test was continued for a period of 24 hours, and the fire brought back at the close of the test as nearly as possible to the same condition as at the time of starting.

This method is not as accurate as starting with a new fire, but considering the comparatively long period of time over which the test was, the error caused by any difference in the condition of the fire at the starting and closing would be very slight.

In reference to the smoke consuming feature of the boiler, I would say that between the firing periods there was absolutely no smoke visible, and it would have been impossible to tell from the appearance of the stack whether or not the boiler was in operation. When fresh coal was fired a very slight evidence of smoke was visible for a period of not more than one minute, so that the operation of the boiler would easily fulfill the requirements of New York City.

The tabulation of the readings and results are as follows:

Data and Results of Evaporative Test.

1. Test conducted by Clark, MacMullen & Riley.
2. Kind of boiler, Peerless down-draft, cast-iron, sectional.
3. Grate surface, 22 square feet.
4. Water-heating surface, 210 square feet.
5. Date, December 9 and 10, 1914.
6. Duration, 24 hours.
7. Kind and size of coal, run of mine, bituminous.

Average Pressures, Temperatures, Etc.

8. Steam pressure by gauge, atmospheric.
9. Temperature of feed-water entering boiler, 52 degrees Fahrenheit.
10. Temperature of escaping gases leaving boiler, 600 degrees Fahrenheit.
11. Force of draft between damper and boiler, .32 inch.

Total Quantities.

12. Weight of coal as fired, 3,625 pounds.
13. Percentage of moisture in coal, 1.20 per cent.
14. Total weight of dry coal consumed, 3,582 pounds.
15. Total ash and refuse, 207 pounds.
16. Percentage of ash and refuse in dry coal, 5.78 per cent.
17. Total weight of water fed to the boiler, 31,350 pounds.
18. Total equivalent evaporation from and at 212 degrees, 36,522 pounds.

Hourly Quantities and Rates.

19. Dry coal consumed per hour, 150 pounds.
20. Dry coal per square foot of grate surface per hour, 6.82 pounds.
21. Equivalent evaporation per hour from and at 212 degrees, 1,522 pounds.
22. Equivalent evaporation per hour from and at 212 degrees per square foot of water-heating surface, 7.25 pounds.

Capacity.

23. Evaporation per hour from and at 212 degrees, 1,522 pounds.
24. Boiler horsepower developed, 44 boiler horsepower or 6,100 square feet of heating surface.

Economy Results.

25. Water fed per pound of coal fired, 8.65 pounds.
26. Water evaporated per pound of dry coal, 8.75 pounds.
27. Equivalent evaporation from and at 212 degrees per pound of dry coal, 10.2 pounds.

Efficiency.

28. Calorific value of 1 pound of dry coal, 14,585 B. t. u.

*Paper presented at the twenty-first annual meeting of the American Society of Heating and Ventilating Engineers, held in New York City, January 19-22, 1915.

29. Efficiency of boiler, furnace and grate, 67.9 per cent.

The following is the analysis of the coal used, samples being taken every hour during the test.

	Dry Per Cent	As Received Per Cent
Moisture	.....	1.20
Volatile Matter	22.22	21.96
Fixed Carbon	70.23	69.38
Ash	7.55	7.46
	100.00	100.00
Sulphur (separately determined)	1.14	1.12
British Thermal Units	14,585	14,412

One of the points of interest to be noted is the comparatively high efficiency with the high stack temperature.

I might suggest in closing that the application of an automatic boiler feeder on the feed line would materially assist in a test of this sort, as it required considerable attention to maintain a constant water level by hand control.

THE SAD TALE OF A CLOGGED CLOSET.

Here is a story told by H. W. Eckhardt, of Cleveland. It is not a fairy tale, but a true tale about a clogged-up water closet.

It appears that some time ago a housewife in the city of Cleveland discovered that the closet in the bathroom was in the aforesaid condition. She called up Mr. Eckhardt, and forthwith he appeared on the scene.

"It can be effectually cleaned out with muriatic acid," said Mr. Eckhardt to the housewife.

"Very well, go ahead and fix it up," replied the latter.

In about an hour the closet had been cleaned of all foreign substances, and even the brown urinal deposits were completely disintegrated.

A few days afterwards the husband of the housewife telephoned to Mr. Eckhardt and declared that the closet had never worked better, and that he was going to tell a neighbor to use muriatic acid for a closet similarly clogged. The neighbor, being a thrifty and economical gentleman, proposed to do the job himself. No high-priced plumbers for him.

The penny-wise and pound-foolish gentleman went ahead and purchased the acid and proceeded to tackle the job of cleaning out the clogged closet. Soon after finishing his work an expression of amazement and horrible indignation spread over his smug and conceited countenance, for Shades of Hamlet, the closet tank began to weep like "rain from the clouds of summer."

The economical-minded gentleman was feeling mighty blue. He told his more fortunate neighbor, who had hired a plumber, that the said plumber must have fooled him, and that the muriatic acid which the plumber suggested was a "put-up" job on the part of the latter—in other words, it was a plumber's trick to ruin his closet, so that he would have to requisition the services of the self-same plumber.

The stingy property owner, it appears, put the "cart before the horse." He put the muriatic acid in the closet tank, instead of in the closet bowl, and before long all the solder in the tank had been eaten up by the acid, and, of course, the tank "wept copiously."

Instantly the husband of the housewife who had called in Mr. Eckhardt, telephoned to him, and delivered himself of the following:

"Mr. Eckhardt, you are no longer a friend of mine. I might have expected such treatment from a plumber. My neighbor, Mr. G., used muriatic acid to clean out a water closet, and now the water is leaking all over his bathroom. That's fine advice you gave me to give to him. I'm through with you, Mr. Eckhardt, positively through with you," and with a bang he hung up the receiver.

In concluding the story Mr. Eckhardt said: "I told this fellow what was the matter with his neighbor's closet, and that I would be glad to remedy the defect. Not for a moment, did I think his fool neighbor would go and

"He Poured the Muriatic Acid Into the Tank."

deposit the acid in the tank—but it seems that he did that very thing. There is a moral in this story, namely: 'Every man can't be his own plumber.'"

Liability for Damages from Fall of Signs.

The Second Appellate Division of the Supreme Court of New York in the case of McNulty vs. Ludwig & Co., 138 New York Supplement, 84, affirms a judgment holding the firm liable for damages for injuries from the fall of a sign which struck the plaintiff as he was walking along on the sidewalk. Bearing on the attempt of the firm to escape liability on the ground that it intrusted the work of putting up this sign to independent, experienced, and competent persons, the court says that it is a general rule, it is true, that the owner of property is not liable for the negligent acts of an independent contractor with whom he has an agreement for the performance of the work. But to this rule there is an exception. If the work itself creates the danger or injury, then the ultimate superior or proprietor is liable to persons injured by a failure to properly guard or protect the work, even though the work is intrusted to an independent contractor. Moreover, it is the duty of a person constructing or maintaining a sign upon a building adjacent to a public street to exercise reasonable care to so construct or maintain it as to withstand such rains or winds as reasonably prudent men, familiar with weather conditions in the locality, would anticipate might occur.

Muscatine, Iowa.—John Redmond has secured the contract for the installation of a vapor heating system in the Sunday School addition to the Presbyterian church.

Office Helps for the Master Plumber

By JOHN F. SCOTT

(Continued from Page 8 in April 3rd Issue)

How One Plumber Systematized His Business.

JOHN KING, Master Plumber, has been established for many years and does a business ranging from small jobbing to large contracts. For a long time he had a bookkeeper, who spent practically all of his time in the office and took care of his end in fine shape. This bookkeeper resigned to accept a better position, and King hired another man to take his place. After about three months King came to the conclusion that the new bookkeeper would be handier with the pick and shovel than with a pen and dispensed with his services.

Next came a young lady, whose recommendations should have been classed as high-class fiction. She could embroider very nicely, and was under the impression that the telephone was to be used principally for friendly conversations. If sent on an errand she considered it her duty to visit her friends in transit. She could also use the typewriter, except that she was extremely careful in the use of capitals and punctuation marks. When she had finished a letter it was generally one sentence from start to finish, without a single comma.

Keeping books was a hidden mystery to her, but she kept the office records to the best of her ability. Eventually the time came when King's patience was exhausted, and he told her that he would endeavor to drag along without her.

King was a shrewd business man. He appreciated the fact that his education had been limited, and that it was practically impossible for him to get along without the proper assistance in the office end of his business. He tried to find a competent man who could do this satisfactorily, and through a business neighbor learned of William Stone, who was recommended as thoroughly qualified for the position. The following week Stone started to work in King's office.

As King had been without office help for some time, Stone's first work was to straighten things up and get the office records in shape.

King helped him to get started, by explaining in detail the methods in use in his office, and the strange part of it was that King seemed to take pride in his so-called system.

Stone plugged along, trying to straighten things out, but the obsolete and roundabout methods were galling to him, and by the end of the first week he was at the exploding point. He found that the cash book was a cash book in name only, and had not been balanced for over a year. The bank account was carried in the ledger, and he could not find that it had ever been balanced or checked with the bank's monthly statement. The first of the following month, when he received the canceled checks and the bank statement, he corrected his balance to agree with the bank, and ever afterward it was checked with the statement each month.

There were about a dozen cardboard boxes with indexes, which were used as files. The incoming invoices were given a superficial check, as it was assumed that they were correct, posted in the ledger and filed in these boxes. In the first month that Stone spent in King's office he sent more debits for overcharges, than had been made in the previous twelve months.

The aim in filing was to file everything according to the job; the papers and invoices pertaining to small jobs were filed as miscellaneous. Sometimes all the papers, including invoices, pertaining to a job, would be rolled together, the name marked on the outside, and the bundle placed, or we might properly say, thrown on a shelf. Once a letter or invoice was filed it almost required the services of a burglar to find it again. For this reason much of the office space was taken up by invoices, letters and things of like nature to which it might be necessary to refer.

The charge tickets were very large, of medium heavy manila, very bulky and hard to handle. After the bill had been sent out and the amount posted in the ledger these tickets were filed on a holder, hung on the wall.

In fact, the methods used made the work difficult and intricate, and the sad part of it is that the methods used in King's office are typical of those existing in hundreds of shops today.

At the end of the first week Stone suggested to King that the office work would be lightened and much time saved if the office were equipped with a vertical letter filing cabinet, and King told him to get one. It had not been installed a week before King realized its advantages, and during the following months, he was quick to act upon and help to work out any suggestion offered. In order that the transformation of this office, from what it was, to an up-to-date systematized business office, the pride of its owner, may be easily understood we will listen to the story from this point as told by Stone.

Filing.

The installation of the cabinet was the beginning of a system, which we worked out, step by step, until our office was as systematic and convenient as that of any business in the country. It enabled us to do the work in one-half the time it formerly took, and it enabled the owner, who was not a bookkeeper, to understand his books and records, without the aid of a bookkeeper.

Our aim always was simplicity and convenience.

By following in our footsteps the small plumber, who is his own bookkeeper, can keep his books and records in first-class shape, and it will not take over one hour of his time each day. He can make pencil memoranda and complete his records at his leisure, as these notations do not become mislaid or forgotten.

The cabinet is of the four-drawer, vertical type, and the cost ranges from $15 up. We paid $20 for ours. It grew to be an indispensable part of our office; it has paid for itself many times over, and it is hard to realize how any business man can get along without one.

As each drawer was equipped with but one follower block, we bought four extra blocks, which enabled us to have two compartments in each drawer. We also bought six sets of alphabetically indexed guides, twenty-five plain guides and one hundred manila folders.

The guides have a reinforced hole at the bottom, through which a rod slips, to hold them in place. With a pair of snips we made the holes in the plain guides into a notch, so that we could move them without disturbing the rods. In the front part of the top drawer, and in the back part of the bottom drawer, we used the blank or

plain guides; in the other spaces we used the indexed guides.

We divided the space in the drawers as follows:

Top Drawer—Front:—Work in progress.

Top Drawer—Back:—Proposals and correspondence relating to work in prospect.

Second Drawer—Front: General correspondence.

Second Drawer—Back:—Quotations and prices received (except for specified jobs).

Third Drawer—Front:—Incoming invoices.

Third Drawer—Back:—Completed contracts and "dead" matter.

Bottom Drawer—Front:—Small catalogues and pamphlets.

Bottom Drawer—Back:—Owner's personal papers.

The drawers are very long and the extra space in the back of each drawer we used for stationery and office supplies, such as billheads, letterheads, envelopes, statements, waivers, etc.

It is surprising how much a cabinet of this kind will hold, and still have all of its contents handy and convenient.

Estimating.

For estimating we used a three-column journal sheet, which is kept regularly in stock by stationers. The first column we used for totaling items of a kind, that is, we would total the sewer work, total the stacks, total the fixtures, and so on, and carried these totals to the second column, if profit was to be added, or to the third column, if profit had already been figured in. On some items, such as sewers, we figured by the foot, installed, including profit.

The sheets used for estimating for each job were fastened together, placed in a folder, with the architect's name written at the top, and filed in the back part of the top drawer. We filed under the name of the architect, or if there was none, under the name of the person asking for the bid. All papers pertaining to this job, including figuring sheets, copy of proposal and prices on fixtures, were placed in this folder. At any time that we wished to refer to a job we simply took the folder from the file and we had everything pertaining to it before us.

As we figured plans we made records of costs, so that we would not be figuring the same thing over and over, as we formerly did, and we soon had a record of the cost of almost every kind of roughing-in ordinarily used. In a stack we included not only the soil and vent, but everything above the basement ceiling except the fixtures. In this way we reduced figuring to a science, and saved a great deal of time. In order to lessen the chance for mistakes we followed a regular schedule in figuring, and to check our figures we would jump it at so much a fixture.

Our estimate sheets always showed the following order:

Sewer stub, and permits.
Tile or iron sewer (all inside of curb).
Catch basin.
Floor and area drains.
Stacks (this includes the soil and vent and everything above the basement ceiling, except the fixtures).
Roughing-in basement fixtures.
Water from curb to floor inside of basement wall.

Water stub and permits.	Labor.
Mains in basement.	Gas-fitting.
Fixtures.	Pipe covering.
Hot water tank and heater.	Vacuum.
Connecting tank and heater.	Profit.

With our records to help us we figured ordinary jobs in from thirty to forty-five minutes. Of course, this would apply only to the ordinary class of work, but even on large work our system helped us, as we could refer to other work of like nature.

We kept track of the expense attached to jobs, and found that the actual expense varied less than one-half of one per cent, when figured in relation to the entire cost.

When one job, on which our bid was about $500, and on which there were no fixtures, was finished, we found that instead of making a profit, we had lost about $4.00. We checked the estimate and found that we had made a mistake of $100 in the addition. We, like others, had no way of checking our figures, except to "look them over."

We decided that we ought to have an adding machine, but these machines ordinarily cost so much that the ordinary shop can hardly afford them. We found, however, an adding machine that sells at $35, and we installed one of them on thirty days' trial.

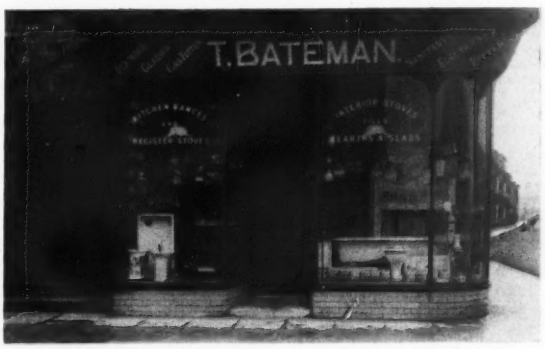
While our object in getting the machine was to check our estimates, we found a number of other ways in which it was a great help. Besides using it for estimating, checking invoices, pay roll, bank deposits, ledger accounts and cash book, we often used it in taking off quantities from plans, as it was quicker and surer than a pencil.

It gave us such good service that we purchased it, and have always considered it an excellent investment.

The amount that we lost in that one bid would have paid for almost three of them. Our experience did not differ from that of hundreds of others. The mistakes cost us more, in actual money, not counting our time, than the price of a machine, that would save us both time and money.

First German Shell in England Drops Near This Plumbing Shop.

The plumbing shop shown herewith is situated midway between Hartlepool and Whitby, England, and is owned by T. Bateman, a master plumber of forty years' standing on this particular site. At the time of the bombardment, Mr. Bateman was on the beach and an eye witness to the marksmanship of the German fleet, eventually being



T. Bateman's Plumbing Establishment Near Hartlepool, England.

ordered to seek cover by the military authorities guarding the coast. It will probably be of interest to some of the readers of "Domestic Engineering" to learn that Professor Arthur Bateman, of The Anglo-American Sanitary Correspondence College in Chicago, served a seven years' apprenticeship and gained much valuable knowledge and experience under the guidance of his father in this establishment.

W. G. Dawson & Co., of Mount Vernon, N. Y., is installing plumbing systems in the residence of Leo Feist. and in two new residences in Bronxville.

Second Week of Show-Room Contest

Interesting Photographs of Interior Shop Displays Received by Editor, Following the Announcement of the Contest

FOLLOWING the announcement of a show-room display contest in the April 3rd number of "Domestic Engineering," which is open to paid-up subscribers who are master plumbers and fitters, a number of interesting pictures of show-rooms in various states have been received by the editor.

In this contest it is the editor's purpose and aim to stimulate a greater interest in the value of the show-room as an asset in business building.

The Plumber as a Merchant.

Both the show-room and the window display possess trade pulling powers that must be duly recognized by the progressive business man. In every up-to-date store the show-room space is conserved and developed to the highest degree of selling efficiency. The modern master plumber and fitter is really a merchant in the larger sense of the word, and as such he must adopt the procedure of the typical merchant. The plumber sells sanitary goods and in most cases he installs them. Being a merchant, it behooves him to attract business through the principal avenues followed by his brother merchants in other lines of business in the community. One of the fundamental and most fruitful avenues for gaining business for merchants in general has been the show-room. It is safe to say, that without this space most merchants would be "lost," and would automatically eliminate themselves from the busy profit-making scene.

Good Display a Silent Salesman.

The attractive show-room is a silent but effective salesman, whose selling arguments often speak more eloquent than words. The master plumber who maintains no show-room or an unattractive one at best, may be quite as efficient a craftsman as his competitor in the next block, who has an attractive show-room display. And yet in the estimation of the average prospective customer, the plumber who neglects his show-room exhibit either in part or entirely is quite prone to be under-rated by the public. Hence the value of making capital of any show-room space which is available for use.

Send in Pictures Early.

Master plumbers and master steamfitters who wish to enter photographs of their show-rooms in the "Domestic Engineering" contest should begin forwarding the photos of their displays to the editor, and not feel that they will do it tomorrow or next week, etc. If you have no photograph of your show-room at hand, then it might be well to get in touch with your local photographer and have one taken. Here is an opportunity to see how your show-room measures up with those of other shops throughout the country, and the more who enter the race the merrier will be the pace.

Eastern Jobber Praises Contest.

In a letter received by a popular and well known eastern jobber of plumbing supplies, the writer praises the show-room contest which has just been announced by "Domestic Engineering." The letter follows in part: "Editor, Domestic Engineering—"The show-room exhibit is quite as important as the window display. It is undoubtedly one of the master plumber's strongest selling assets, and I do not think that any thinking and wide-awake plumber will wantonly let his room 'go to seed.' In this day and age when competition is so keen, it would seem that very few live men in the trade would forget tc make good use of show-room space. It is to be hoped that the show-room contest which has been inaugurated by your esteemed publication, will stimulate a more widespread interest in the subject of better looking show-rooms."

WIN ONE OF FIVE PRIZES

Mail Us a Photo of Your Show-Room to Be Entered in "Domestic Engineering's"

SHOW-ROOM DISPLAY CONTEST.

1. This contest is open to all paid-up subscribers for "Domestic Engineering" who are master plumbers or master steamfitters.

2. The contest closes June 15th, and the decision of a committee of three impartial judges will be announced soon afterwards.

3. The prize for the best show-room display will be $20; the second prize, $10, and the third, fourth and fifth prizes will be $5.00 each.

"LESLIE'S WEEKLY" COMMENTS ON EDITORIAL IN "DOMESTIC ENGINEERING."

The Editor of "Domestic Engineering" is in receipt of the following letter from Mr. Chris Bailey, manager of the Patrick P. Bailey Co., plumbers, steam and gas fitters, of Montgomery, Ala.:

"Editor 'Domestic Engineering':—We notice with pleasure the editorial in 'Leslie's Weekly' of April 1st under 'Fads,' in which the editor calls attention to your efforts to suppress the jokes that are occasionally printed against the plumber. It is a pleasure to see a periodical like 'Leslie's' take up a matter of this kind, and I trust you will continue the good work."

The Wichita Heating & Plumbing Co., of Wichita, Kans., is moving from its old location at 151 North Emporia Avenue to 138 North Market Street, where it will have a modern display room for both plumbing and heating fixtures. This firm has recently secured the contract for heating and ventilating a public school building to be erected in Hutchinson, Kansas. Consideration $13,000. They also have the heating and plumbing contracts on federal buildings to be built in Arkansas City, Kans., and McPherson, Kans.

Questions and Answers

THREE PLUMBING QUESTIONS ANSWERED.

Editor "Domestic Engineering":—Please answer the following questions for me.

1. What is the objection to a round-way stop and waste cock?

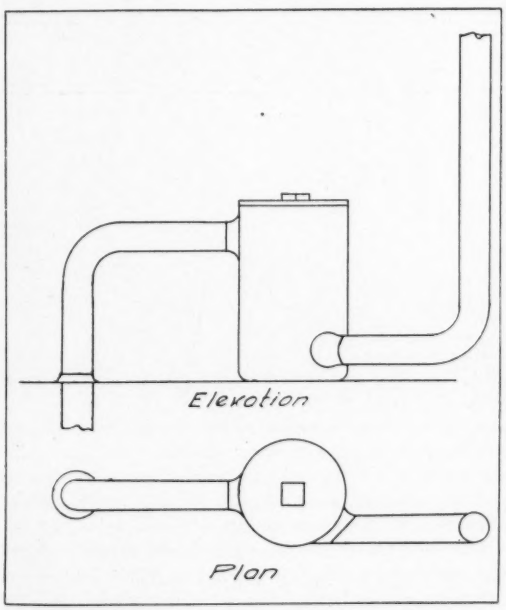
2. Describe and show illustration of method of connecting a drum trap so that it will be self-scouring.

3. If a building is supplied by four 1-inch mains, each supplying a different section of the building, and it was desired to install a hot water supply system for the entire building, how would you construct it without going to the city main?

Chicago, Ill. K. M.

1. In answer to correspondent's first question, we would say that we know of no objection to round-way stop and waste cocks.

2. The only way that we know of for increasing the scouring action of a drum trap, is to connect the waste inlet to the trap on a tangent, instead of directly towards the center of the trap. This connection we show in our



How to Increase Scouring Action in Drum Trap.

illustration. The plan view shows most clearly the connection that we are speaking of. When so connected, the water is given a whirling motion as it enters the trap, which creates a much stronger scouring action than the common connection.

3. We do not know exactly what the conditions are in the building in which this hot water supply system is to be installed, or just what the point at issue is. If all water that enters the building is on one meter, or paid for by the owners, there would seem to be no reason why a supply for the hot water tank could not be taken from any one of the supplies in the building. If these supplies are not of sufficient capacity for this additional work, the boiler supply might be taken off ahead of the point where the four 1-inch supplies are taken off. If there is reason for doing so, the boiler supply may be provided with its own meter.

If we have not answered this question in a way to cover the point intended by correspondent, we would suggest writing again, with more explicit information.

HOW TO CONNECT TWO BOILERS TO HEATER.

Editor "Domestic Engineering":—I enclose sketch on which I would like your assistance. A 30 gal. and a 40 gal. boiler are to be heated by a coil in a laundry heater

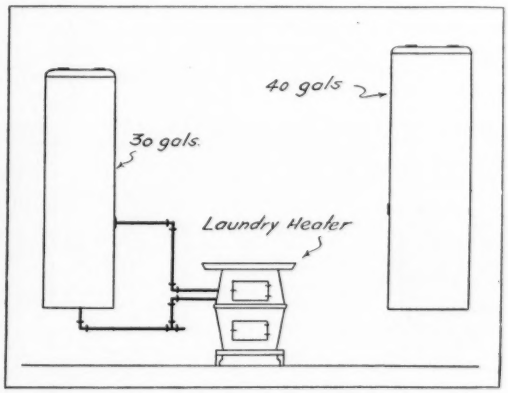


Fig. 1.

which already heats the 30 gal. boiler. Being in doubt as to the plan being practicable, I would like your opinion.

Pottsville, Pa. R. A. E.

Fig. 1 shows correspondent's problem. There should be no difficulty in making satisfactory connections, but it

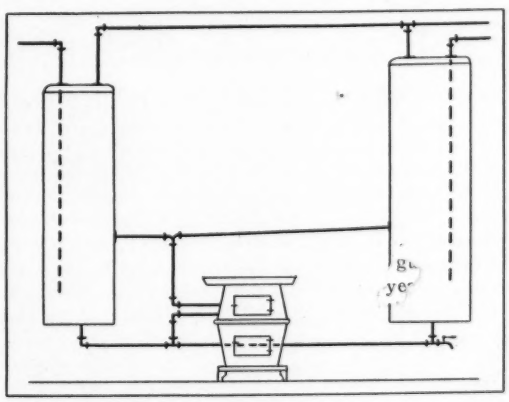


Fig. 2.

seems to us there would be a serious question as to whether the coil, which now is heating a 30 gal. boiler in a satisfactory manner no doubt, would be able to heat an

additional 40 gallons, or whether it would fail. This seems to us the most important question.

As to connections, we show in Figs. 2, 3 and 4, three

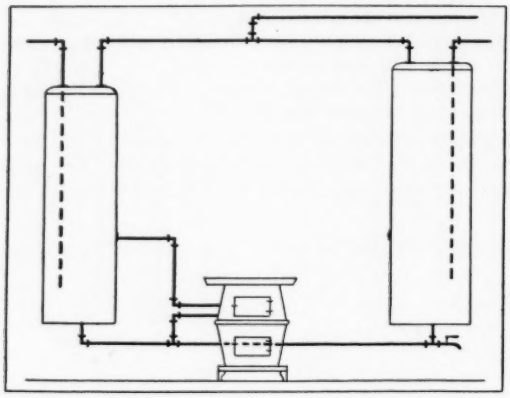


Fig. 3.

different methods of connecting. Any one of the three should do good work.

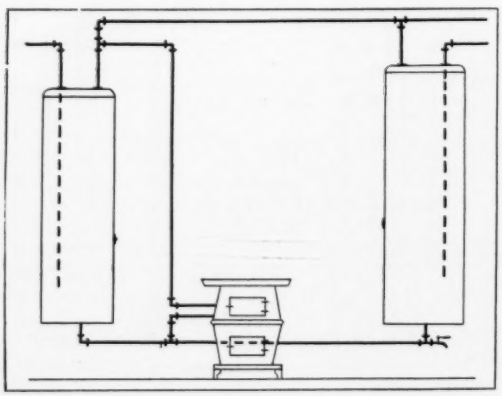


Fig. 4.

Perhaps it would be easiest to try the Fig. 3 method first, as the changes could be made most easily.

WHERE FOUNTAINS FAIL ON ACCOUNT OF LOW PRESSURE.

Editor "Domestic Engineering":—I enclose sketch of a water supply system in a school building that gives trouble. The system is six years old, and prior to this time has given satisfaction. However, the capacity of the street main has been overtaxed, and sufficient pressure is not available. When the closets are being flushed in a body, as at recess, the fountains fail, but are all right after this heavy demand is over. I propose to change the fountain connections, as shown by dotted lines. The question is whether the fountains will get sufficient water, or whether a suction would arise through the openings. Kindly advise me what to do, as the city refuses to lay a larger main.

Grand Rapids, Wis. E. L. J.

Our illustration, Fig. 1, shows correspondent's problem. He states that for six years the fountains have given satisfaction. Even though it looks as if the cause of the trouble was insufficient size of water main, we would suggest the possibility that the pipes may be partially filled. If this should prove true, cleaning out the pipes might overcome the difficulty.

We note that the present supply is only ½-in., and should judge that the run from the meter to the fountains might be of considerable length. It seems to us that the best way would be to replace the present line with ¾-in. pipe, taking a ½-in. branch to each of the two fountains. We would expect better results from this change than from the one suggested by the dotted lines, for the reason

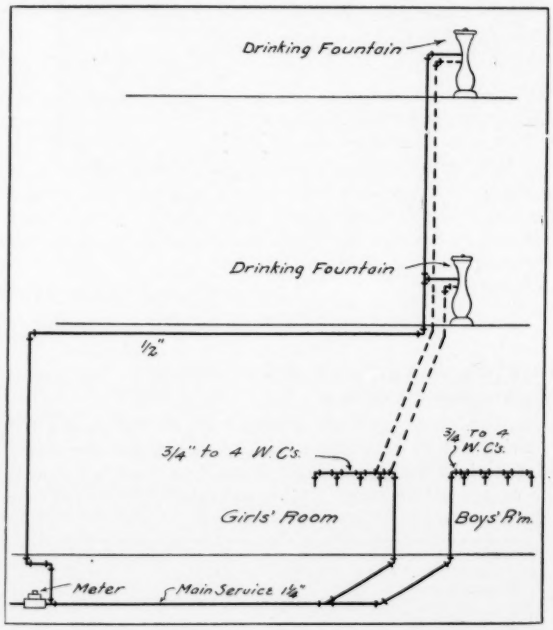


Fig. 1.

that the supply to the four water closets from which the proposed supplies are to be taken, is only ¾-in., and is no larger than is necessary for its present work. We do not see, however, how any trouble from suction would be likely to occur.

Do Not Charge Royalties or Issue Licenses.

Editor "Domestic Engineering":—In the article about Vacuum Heating, published on page 2, in the April 3rd issue, I note that Alfred G. King, the author of the article in question, refers to the necessity of exacting royalties, on account of the time and expense devoted to originating and perfecting vacuum heating devices. He also refers to the necessity of the user to obtain license for the use of such system, implying that the Reliable air-line system requires royalty payments for its services.

In this connection permit us to state that we do not charge royalties or issue licenses, and while our devices and vacuum pumps for air-line systems are patented, they are sold at a stipulated price to the jobbers and to the trade, and when installed the owner has no obligation to pay royalties.

Cleveland, O. The Bishop-Babcock-Becker Co.,
By T. F. Hynes.

Newark, N. Y.—The Wayne Plumbing, Heating & Supply Co. has been incorporated with a capital of $2,000. The incorporators are Jesse T. Spaulding, Cornelius J. Engels, E. D. Spaulding and E. Engels, all of this city.

Michigan Master Steamfitters in Convention

Second Annual Meeting of Michigan State Association of Master Steam and Hot Water Fitters Held in Detroit, April 8th

THE second annual convention of the Michigan State Association of Master Steam and Hot Water Fitters was held on Thursday, April 8th, at the Tuller Hotel, Detroit, Mich.

Morning Session.

The convention was called to order by President Julius A. Ziesse, at 10 o'clock. The first and principal speaker at the opening session was William F. McDonald, a well-known heating and ventilating engineer of Detroit. Mr. McDonald spoke at length concerning problems of the heating fraternity. He referred to the unfairness taken by architects over heating contractors, and attributed much of this unfairness to the anxious zeal of contractors to obtain contracts.

C. P. Tietze, of Detroit, made some pertinent remarks relative to unsatisfactory conditions resulting after installation. These conditions, he declared, were mainly due to incompetent people in the shape of janitors, near janitors and servants running the heating plant.

Delegates and Guests at the Second Annual Convention of the Michigan Master Steam and Hot Water Fitters Association Held at Detroit, Mich., April 8, 1915.

Visit Detroit Athletic Club.

After adjournment at 12:30 p. m. the delegates went in a body to the Detroit Athletic Club, which is nearing completion. They went through the building from cellar to attic, inspecting the heating plant installed by the Vinton Plumbing & Heating Co., under the able supervision of James R. Bolton, president of the Detroit Master Plumbers' Association, and one of the live heating men of the city.

Upon reaching the fourth floor of the club they were shown the splendid 25x75 foot swimming tank, which was opened by Miss Annette Kellerman a few weeks ago. The famous woman diver took the initial plunge in the presence of over 600 women of the city, who were among the 1,600 invited to the opening ceremonies. Miss Kellerman declared the tank was the finest she was ever in. The swimming tank at the Detroit Athletic Club is one of the few in the country which is situated above the basement of a building.

Afternoon Session.

The convention convened at 2:30 p. m. The first order of business was the report of the auditing committee, which was received and ordered entered on the minutes of the meeting.

The report of Secretary-Treasurer Otto Wurm showed that the association was in a healthy financial condition, and that the outlook for the ensuing year was roseate. The report was adopted by the convention.

Following the announcement that the resolution committee had no report to make, the convention went into executive session until 3:30 p. m.

Election of Officers.

The following officers were elected to guide the destiny of the organization during the coming year:

President, William Gourlay, Jr., Detroit; vice-president, William Pulte, Grand Rapids; secretary-treasurer, Otto Wurm, Detroit.

Members of Executive Board: Charles A. Blaney, Kalamazoo, and C. L. Bigelow, Saginaw.

The Wolverine aggregation of steam and hot water fitters is a young and virile association. The new officers of the organization are men of progressive ideas, under whose leadership the association is sure to develop to greater proportions.

TEXAS MASTER PLUMBERS IN TWO-DAY CONVENTION.

N. S. Hill, of Waco, Is Chosen President of "Lone Star State" Plumbers.

The annual convention of the Associated Master Plumbers of Texas was held at the Y. M. B. L. club rooms at Waco, Texas, April 8th and 9th. Representatives of the craft from many sections of the state were in attendance.

Thursday Morning Session.

The convention was called to order at 10 o'clock, after which Mayor J. W. Riggins, of Waco, delivered the address of welcome. W. J. Geisler, on behalf of the local association of master plumbers, extended greetings to the delegates.

Following the reading of the president's report, the following committees were appointed:

Resolutions:—J. J. Madigan, Dallas; Joseph Netzer, Laredo; N. S. Hill, Waco; W. B. Baker, Beaumont.

Credentials:—J. O. Montreif, Fort Worth; George Mattice, El Paso; William Wheeler, Victoria.

Legislative:—John Donnelly, Austin; Harry Kahn, Dallas; E. J. Vance, Waco; W. E. Thatcher, Fort Worth.

Auditing:—A. Coleman, Dallas; James Leiber, San Antonio; W. H. Payne, Fort Worth.

Memorial:—L. P. McChesney, El Paso; D. C. Malitz, Galveston; H. R. White, Tyler; F. J. McCulloch, Wichita Falls; J. E. Kinney and D. F. Sullivan, both of San Antonio.

Sergeants-at-Arms:—J. H. Dodd, Dallas, and Edward Gutzeit, of San Antonio.

At 2 p. m. the association reconvened for a business session. At 4 p. m. the ladies of the convention were guests of the local association in an automobile tour of the city and surrounding country, and at 8 p. m. both the ladies and the delegates were guests at a theater party at the Hippodrome theater.

Closing Session.

At the final business session, held on Friday afternoon, the following officers were elected: President, N. S. Hill, Waco; vice-president, Adolph Collman, San Antonio; treasurer, J. B. Donnelly, Austin.

The newly elected members of the board of directors were: R. C. Malitz, Galveston; Charles Glenk, Fort Worth; J. A. Brennan, El Paso, and J. H. Todd, of Dallas. Dallas was chosen as the next meeting place.

On Friday evening an elaborate banquet was given at the Waco hotel. Frank Tirey presided as toastmaster.

NORTHWESTERN PLUMBERS IN ANNUAL CONVENTION.

The annual convention of the Northwestern Master Plumbers' Association, was held on April 8th, at Cambridge Springs, Pa., at the Hotel Bartlett.

The sessions were attended by over one hundred delegates, many of whom brought their wives to participate in the social side of the convention. The organization is composed of members from western Pennsylvania and eastern Ohio.

The following officers were elected for the ensuing year: President, Chas. W. Wilson, Youngstown; vice-president, L. J. Shellhammer, Warren, Pa.; honorary vice-president, A. C. Eynon, Canton; secretary, M. C. Judd, Meadville; treasurer, L. L. Lord, Meadville; sergeant-at-arms, Mac H. Perry, Meadville. Board of directors: F. G. McCue, Oil City; M. J. Murray, Jamestown; Fred W. Veith, Erie; H. P. Cahill, Akron; and W. J. Scholl, Youngstown.

The evening was given over to a social session with cards and dancing. At 11 o'clock the members enjoyed an elaborate banquet.

NEW YORK STEAMFITTERS ELECT OFFICERS.

The annual meeting of the New York City Association of Master Steam and Hot Water Fitters was held on March 23, when the election of officers took place, with the following result: Joseph G. Geoghegan, president; William H. Curtin, vice-president; J. E. Rutzler, treasurer; Henry B. Gombers, secretary. On the Board of Directors are: Joseph G. Geoghegan, chairman; W. H. Curtin, vice chairman; J. E. Rutzler, Michael J. Callahan and G. F. Steffany.

NEWARK STEAMFITTERS ELECT OFFICERS.

At the annual meeting of the Master Steam and Hot Water Fitters' Association of Newark, N. J., held last month, the following gentlemen were elected to office for the ensuing year: John Nellis, president; John G. Keller, vice-president; Harry Geiser, secretary; T. B. Cryer, treasurer; Thomas G. Badgley, sergeant-at-arms. Executive board members: Robert Berla, one year; W. A. Lawson, two years.

April 19 and 20, 1915.—Eleventh annual convention of the Kentucky State Association of Master Plumbers at Ashland, Ky.

April 20 and 21, 1915.—Massachusetts State Association of Master Plumbers, at Boston. Banquet on the evening of April 20, business sessions April 21.

May 5, 1915.—North Carolina State Association of Master Plumbers, at Rocky Mountain, N. C.

May 10, 1915.—Florida State Association of Master Plumbers, at Orlando, Fla.

May 10 and 11, 1915.—The Master Plumbers' Association of Oklahoma, at Tulsa, Okla.

May 11, 12 and 13, 1915.—The National Pipe and Supplies Association, at Buffalo, N. Y., with headquarters at the Lafayette Hotel.

May 12, 1915.—Connecticut State Association of Master Plumbers, at Bridgeport, Conn., with headquarters at Stratfield Hotel.

May 14 and 15, 1915.—The State Association of Master Plumbers of Washington, at Bremerton, Wash., with headquarters at Hotel Wolfram.

May 18 and 19, 1915.—Pennsylvania State Association of Master Plumbers, at Wilkes-Barre, Pa., with headquarters at Hotel Sterling.

May 25, 26 and 27, 1915.—New Jersey Master Plumbers' Association, at Trenton, N. J.

June 1, 2 and 3, 1915.—Seventh annual convention of the National District Heating Association, at Chicago, Ill. Headquarters at the Hotel Sherman.

June 21-24, 1915.—The twenty-seventh annual convention of the National Association of Master Steam and Hot Water Fitters, at Milwaukee, Wis.

June 28 and 29, 1915.—The Master Plumbers' Association of California, at San Francisco.

June 30, July 1 and 2, 1915.—The National Association of Master Plumbers, at San Francisco, Cal.

August 9, 10 and 11, 1915.—American Society of Sanitary Engineering, at San Francisco, Cal.

STEAM FITTERS OF NEW YORK STATE TO MEET IN MAY.

The twenty-first annual convention of the New York State Association of Master Steam and Hot Water Fitters will be held on Tuesday, May 11, in New York City. A feature of the meeting will be a reception of all non-members in the profession who are in attendance. Every member is urged to extend a personal invitation to all non-members of his acquaintance.

KENTUCKY PLUMBERS READY FOR ANNUAL CONVENTION.

The Louisville Master Plumbers' Association met on Monday evening, April 12th, to complete arrangements for its part in the convention of the Kentucky Master Plumbers' Association, to be held at Ashland, Ky., April 19th and 20th. According to Secretary W. H. Matlack, there will be about twenty members of the local organization who will attend the convention.

Members of the Kentucky State Association of Master Plumbers residing at Bellevue, Covington, Newport and Dayton, Ky., chartered one of the Green Line Boats, to leave Cincinnati, O., on April 17th, at 5 o'clock in the evening. A rate of $4 for the round trip, including berths and meals, was obtained. The secretary of the state association was asked to invite all of the members of the organization to meet at Cincinnati and take the river trip.

The Louisville delegation decided to go by rail over the C. & O., leaving Louisville at 9 o'clock Sunday morning, as it was impossible for some of the delegates to get away Saturday morning. The Louisville members will arrive at Ashland at 3 o'clock Sunday afternoon, and will leave Ashland Tuesday night at the close of the second day's convention.

The convention sessions will be held at the I. O. O. F. Hall, but headquarters will be maintained at the new Hotel Ventura.

The tentative program for the convention will be a reception in the lobby of the Hotel Ventura at 10 o'clock Monday morning, the convention being formally opened at 2 o'clock in the afternoon with an address of welcome by Mayor Salesbury, of Ashland. Responses to the address of welcome and the roll-call will follow in order. At 4 o'clock in the afternoon the ladies will be entertained by a trip on the Ohio river to Ironton, O., and that evening a theater party has been arranged for at 7 o'clock.

Tuesday, April 20th, the business session will start at 9 o'clock in the morning. The ladies will spend the morning in a shopping tour. The third session of the convention will be held at 2 o'clock in the afternoon, and the ladies will be taken on an automobile trip. At 7 o'clock in the evening a dance and buffet luncheon will be held at the headquarters of the Cosmus Club. J. J. O'Neal and J. T. Moran, of Ashland, are in charge of this entertainment.

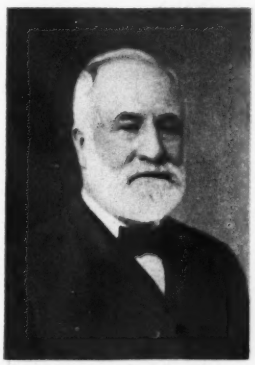
Obituary

John D. Walsh.

John D. Walsh, superintendent of the American District Steam Co., of North Tonawanda, N. Y., and holder of numerous patents on underground heating systems, died Tuesday evening, April 13th, at his home in Lockport, N. Y. Mr. Walsh had been ill for months, and in January was compelled to return to Lockport from his winter home in St. Augustine, Fla. He was born in Lockport, N. Y., 74 years ago, and educated in Lockport Union School, following which he learned the patternmaking trade with the late Birdsall Holly, inventor, and founder of the American District Steam Co. When this company's plant was opened in 1877, Mr. Walsh immediately became superintendent. He served four years in the Civil War. One son and two daughters survive him.

John Crawford.

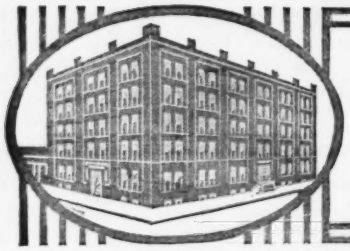
John Crawford, one of the founders of the Master Plumbers' Association of Boston and Vicinity, and one of the oldest master plumbers in New England, died on April 8th at Mechanics Falls, Me., where he had lived for the past five years, since retiring from active business in Boston. Mr. Crawford was 80 years of age and a widower. He had been connected with the plumbing business, first as a journeyman and later as a master, for more than 60 years. He started in business for himself in 1878 at 50 Howard Street, Boston, and remained at the same location until his retirement. The business is still conducted at that address as John Crawford & Co. by Harry Brown, who was employed by Mr. Crawford for 20 years. Mr. Crawford was very active in association work, and at the time of the national convention in Boston a few years ago was a prominent figure, and contributed an interesting historical review to the guide book published in connection with the affair. He was also prominent in Masonic circles and a member of Mizpah lodge of Cambridge.



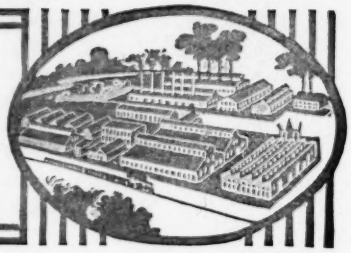
The Late John Crawford.

Edward J. Macauley.

Edward J. Macauley, a member of the plumbing firm of Macauley Bros., of Providence, R. I., died at his home in that city on Saturday, April 3rd, death being due to a stroke of apoplexy. Mr. Macauley was a native of Providence and after leaving school he entered the employ of the Brown & Sharpe Mfg. Co., with whom he remained for several years. He left this concern to learn the plumbing trade and at the conclusion of his apprenticeship he became a member of the firm of Macauley Bros., the other partner being his brother, John H. Macauley. Mr. Macauley was in his 61st year and had been a master plumber for a quarter of a century. One son survives him.



Among the Wholesalers and Manufacturers



MAKING EXTENSIVE IMPROVEMENTS.

The Ideal Tank & Supply Co., of 307-311 Chestnut Street, Peoria, Ill., is making extensive improvements in the way of office and showroom equipment.

NOW LOCATED IN LARGER QUARTERS.

The Hoffman Specialty Co., of Boston, Mass., has removed to larger quarters at 110 High Street. The change was caused by increase in the company's business.

BUYS CENTRAL BRASS & STAMPING CO. STOCK.

L. R. Nelson has recently purchased the stock and equipment of the Central Brass & Stamping Co. at 1808 South Washington Street, Peoria, Ill., and he will continue the manufacture of a line of brass specialties for lawn-hoses.

DETROIT BRASS WORKS INCREASES CAPITAL STOCK.

The Detroit Brass Works, of Detroit, Mich., has increased its capital stock from $250,000 to $400,000. The officers of the company are: A. W. Fussey, president; A. L. Hanson, vice-president; E. B. Whitcomb, treasurer, and G. C. Hall, secretary.

NOW IN LARGER QUARTERS.

The Crown Die & Tool Co., of Chicago, has just moved its offices, factory and display rooms from 105 North Canal Street, into the Mead Cycle Building at the corner of Canal and Washington Streets, where the company has secured larger and more commodious quarters.

FILE SUIT AGAINST NATIONAL TUBE CO.

A suit alleging that the National Tube Co., of Pittsburgh, Pa., is guilty of violating the Texas anti-trust laws was filed at Austin, Tex., on Wednesday, April 7th, by Attorney-General Looney in the district court against that corporation. The suit seeks to recover penalties aggregating nearly $750,000 for the alleged violation.

THE APRIL MEETING OF THE ILLINOIS CHAPTER OF A. S. H. & V. E.

The Illinois Chapter of the American Society of Heating and Ventilating Engineers held its regular monthly dinner and meeting at the Great Northern Hotel, in Chicago, on Monday evening, April 12th, with President Newport in the chair.

Following the roll call and reading of the minutes of the previous meeting it was announced that the report of the Chicago Ventilation Commission was now in print, and could be obtained by communicating with Professor Shepard, of the Chicago Normal School.

The appropriation of $50 made to the Committee on Pipe-Covering some time ago was reappropriated to the Committee on Air-Washing by a unanimous vote.

Dr. Vernon Hill, of the Division of Ventilation, of Chicago, spoke about the complete equipment for testing air-washers, which has been installed at the pent house in the local city hall. He invited members of the chapter to inspect this experimental plant at any time.

As the committees on air-washing and tests had no report to make the discussion of the evening centered upon methods of heating and controlling the temperature of swimming pools and shower baths.

Leo H. Pleins, sanitary engineer for James B. Clow & Sons, of Chicago, in an interesting address endorsed the closed type heater in place of the injector method of heating indoor pools.

W. G. Braemer, manager of the air-conditioning department of Warren-Webster & Co., of Camden, N. J., spoke of the efficient air-conditioning plant and laboratory which has been installed in that city, and invited any members who chanced to be in that part of the country to visit the plant.

The next meeting of the Illinois Chapter, which is to be held on Monday evening, May 10th, will be the closing one of the season. It will be in charge of the Committee on Air-Washing.

NEW YORK HEATING AND VENTILATING SCHOOL CLOSES SEASON.

The closing session of the 1914-1915 season of the New York School of Heating and Ventilating took the form of a dinner and social gathering at the Wool Club on West Broadway, Monday evening, April 12th.

Fifty members and guests were on hand to make merry at the festive board, presided over by Professor Charles A. Fuller, director of the class. Frank K. Chew acted as toastmaster, and Frank T. Chapman, who represented the American Society of Heating and Ventilating Engineers, extended an invitation to all to join the Society at its semi-annual meeting at San Francisco in September.

Mr. Fuller, in recounting the history of the class suggested that an alumni association be formed to supply the energy and assistance necessary for the continued growth and advancement of the class. He appointed E. A. Kingsley, president; M. J. Sage, vice-president, and George G. Schmidt, secretary-treasurer of such an organization. A. J. Hoxie will act as chairman of a committee on organization.

R. L. Pryor, W. J. Olvany, who represented the National Association of Master Steam and Hot Water Fitters, and M. Peabody spoke on the merits of the course

and the great good it was accomplishing. The inimitable Jack Arnor supplied the wit and humor of the evening and had an appreciative and demonstrative audience. Mr. Kraft, of the Westinghouse Electric Co., also spoke, offering the services of his company in advancing the educational purpose of the course.

Mr. Fuller was assisted by Messers. Clark, MacMillen and Riley in conducting the course. G. S. Schmidt is secretary. Thirty-nine members were enrolled this year, and it is the purpose of those in charge to double that number the coming session, which opens next November.

Personal Mention

"Slow-up!" Ye cop did say
One joyous April day,
As O. P. steered his way
Past barns where in ye hay
Fat hens their eggs did lay,
He laughed and yelled—"nay, nay,
Ye fine I'd sooner pay!"

Most people are born to creep and then to walk, but the inhabitants of the Wolverine state are born to creep and then to ride—at least most of 'em. Let him who would deny the compelling truth of this assertion appear and state his objection. Let him trot out his arguments to disprove the incontrovertible and unassailable veracity of this observation. In Michigan every other man rides

O. P. Benjamin, Vice-President and General Manager of the Detroit Valve & Fittings Co., Detroit, Mich.

as if by right divine. It appears to be a sort of a birthright, while in other cases it is a naturalized right. In other states men may come and men may go, but up in Michigan they ride. Michigan is the happy hunting ground of the automobile. They make 'em by the millions up there. Michigan folks seem to have lost the art of walking. Their one consuming hobby from sunrise to sunset is to ride, ride, ride, and then ride some more. For instance, there is a Wolverine gentleman, well known to the trade, whose hobby for years used to be work, but within recent summers he has become inebriated with the desire to "hit 'em up" over boulevards and choice country roads. Yes sir, O. P. Benjamin is some speeder. Official records of his time between Detroit and Wyandotte have not been made public, for fear that the bureau of safety would get him "dead to rights," and order all the "durn" sheriffs and constables in the country after Benjamin, who, by the way, is the popular vice-president and general manager of the Detroit Valve & Fittings Co.

Ward Hillman, sales manager of the Hart & Crouse Co., Utica, N. Y., passed through Chicago this week on his return from the Panama-Pacific International Exposition at San Francisco, Cal.

A. T. Cobb is a new addition to the sales department of the Exeter Brass Works, of Exeter, N. H. He will cover eastern territory, and was in Boston last week under the guidance of W. B. Folsom, general manager of the company.

W. L. Cleveland, formerly with the Haydenville Co., of Haydenville, Mass., and New York City, is now associated with the George H. Trudell Co., jobbers of plumbing supplies at Manchester, N. H. He will cover New England territory.

John C. Jamieson, sales manager of the George J. Roberts Co., of Dayton, O., was encountered in Peoria, Ill., this week by a representative of "Domestic Engineering." Mr. Jamieson reported business good and the outlook very encouraging.

J. B. Chambers, for many years treasurer of the N. O. Nelson Mfg. Co., of St. Louis, Mo., passed through Chicago this week en route to Syracuse, N. Y., to assume his new duties as treasurer of the Pierce, Butler & Pierce Mfg. Corporation in that city and of the Kellogg-Mackay Co., of Chicago.

Philip Mueller, superintendent of the H. Mueller Mfg. Co., Decatur, Ill., is some sportsman. Whenever his duties permit, he is afield with a fowling piece or a fishing rod and he never comes home empty-handed. His success in this line results in an abundance of wild game on his table in the regular seasons. When he is particularly fortunate, duck and quail dinners, etc., are given to his friends, and these events are always remembered as gastronomic masterpieces, for Mrs. Mueller is an adept in the supervision and preparation of the game delicacies which her husband provides. Mr. Mueller is not given to boasting of his prowess, but occasionally when he does something unusual with gun or rod his chest expands momentarily. Such was the case a few days ago when he visited the preserve of the Decatur Fishing Club and hooked a 5¾ pound black bass. It was great sport for Philip, and any fisherman can easily visualize the moments of thrilling excitement which followed the strike. The next day the fish was photographed, held up by Philip Mueller Cozad, grandson of the superintendent, which photograph is reproduced herewith.

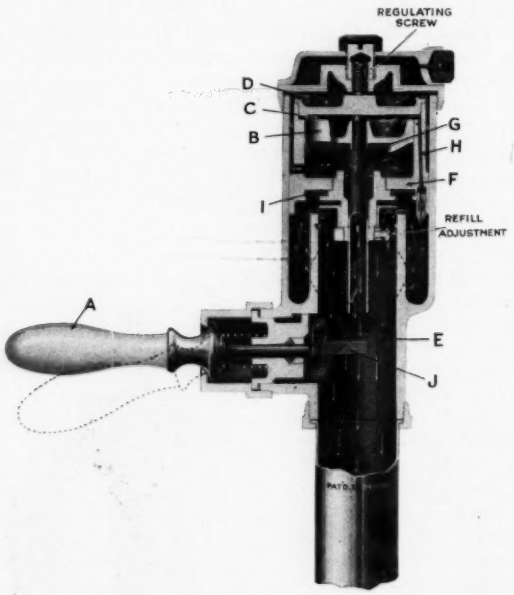
Philip Mueller's Grandson and the 5¾-lb. Black Bass.

CHAS. S. STEPHENS CALLED BY DEATH.

Charles S. Stephens, formerly member of the firm of Story & Stephens, manufacturers' representatives, of New York City, died at his home in that city on Tuesday, April 13th, after suffering under declining health for the last two years. Mr. Stephens was for many years closely identified with the wrought pipe business, originally with the National Tube Works, at McKeesport, Pa., later with the Riverside Iron Works, of Wheeling, W. Va., and still later with the Wheeling Steel & Iron Co., of Wheeling. About four years ago he entered into partnership with Robert K. Story, of 150 Nassau Street, New York City, a connection which lasted until two years ago, when failing health compelled him to retire from business.

THE SKINNER FLUSH VALVE.

The Skinner flush valve, a sectional view of which is shown herewith, has just been placed on the market by the Perkins-Skinner Valve Co., 1313 Chamber of Commerce Building, Chicago, its manufacturers, who describe it as a new flushing apparatus built on engineering principles with metal pistons and cylinders, having no leather cup washers or rubber diaphragms, and they also claim

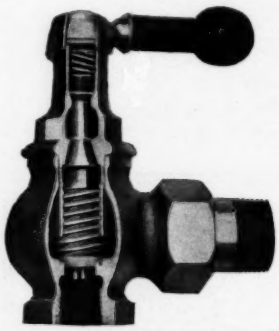


Sectional View of the Skinner Flush Valve.

that this valve assures positive refill to bowl adjustable to the smallest washdown or the largest siphon jet closet. The time of flush is regulated from the outside of the valve without cutting down or restricting the by-pass. It allows use of large by-pass, through which water passes in the opposite direction every time the valve is tripped, preventing any chance of clogging. In introducing it to the trade the manufacturers also state that the metal pistons in this valve are loose fitting, with smooth surfaces working in metal cylinders, lubricated continually by the water, preventing all wear, lodging of sediment, grit, lime or corrosion, and that both pistons are floating and cannot stick or be held off seat. Parties not acquainted with this valve can secure particulars from the manufacturers upon request, mentioning "Domestic Engineering."

THE RICHARDSON PACKLESS GRADUATED RADIATOR VALVE.

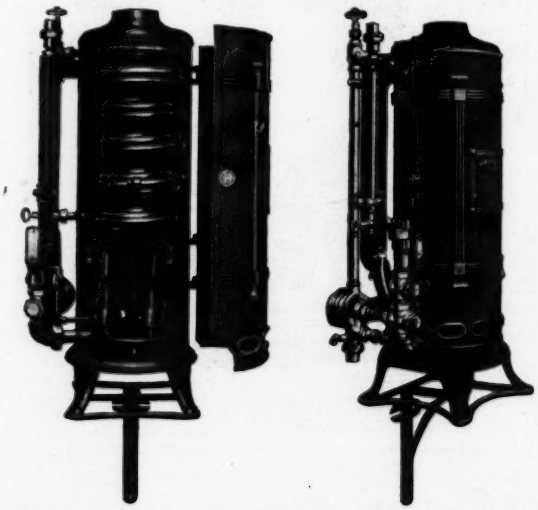
The Richardson packless graduated radiator valve, shown herewith, is manufactured by the Richardson & Boynton Co., of 31 West Thirty-first Street, New York City, and 171 West Lake Street, Chicago. This valve is described as being made of heavy pattern steam metal, heavily nickel plated and furnished with hard rubber handle. A three-quarter turn opens or closes the valve, and it is also graduated for partial opening. These valves are made in ¾-inch and 1-inch sizes, the ¾-inch size being ample for radiators up to 100 square feet, the manufacturers state. The valve is placed at the top of the radiator at one end where it can be easily operated, and being of packless construction it is said that it will never leak nor require attention. The manufacturers will be glad to send interested parties further information on request, mentioning "Domestic Engineering."



Richardson Radiator Valve.

A NEW HOFFMAN INSTANTANEOUS AUTOMATIC WATER HEATER.

The two illustrations shown herewith are an open and closed view of the new Hoffman No. 1½ D instantaneous automatic water heater, which has recently been placed on the market by the Hoffman Heater Co., of Lorain, O. This heater is made for use in cottages, bungalows and flat buildings, and especially in southern territory and on

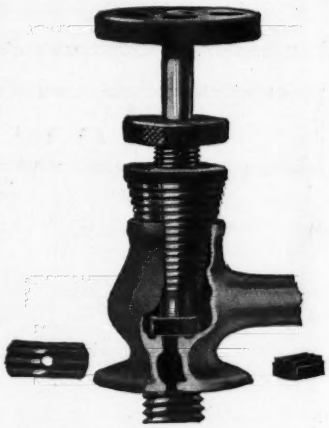


The New Hoffman Instantaneous Automatic Water Heater.

the Pacific coast. The manufacturers state that it has a capacity of heating 1½ gals. of hot water per minute. It is thermostatically controlled, has a cast iron jacket, and is built to either be set on the floor or placed on brackets. Parties interested in such a water heater can obtain complete information from the above-named company on application, mentioning "Domestic Engineering."

THE "SKINNER" BIBB RESEATER.

The accompanying cut illustrates the "Skinner" bibb reseater, which has recently been placed on the market by M. B. Skinner & Co., of 558-562 Washington Boulevard, Chicago. The manufacturers state that to use this reseater it is only necessary to slip off the bonnet of the leaky faucet, insert the tool, fitted with the proper cutter, turn the feed-screw down until the cutter rests lightly on the bibb seat. Then turn the wheel steadily, forcing the cutter down slowly, unyieldingly, surely, with occasional slight twists of the feed-screw, and a smooth, accurate seat is the result. The makers are of the opinion that this tool ought to be in every plumber's kit, and they will be glad to send interested parties full particulars on request, mentioning "Domestic Engineering."



The Skinner Bibb Reseater.

Sales of Pig Iron Small—More Interest in West.

Activity continued in buying for export of miscellaneous products of steel, but buying for domestic consumers fell off considerably. Foreign orders since April 1st amounted to 325,000 tons of steel in all forms. Other contracts for shipment abroad are pending, including rails, bars, plates, wire, sheets and miscellaneous products. Higher prices prevailed for shipments to Europe and the Far East, which is an encouraging feature. Domestic railroads are buying in small quantities just what is necessary for their requirements. Rail mills secured orders for only 8,000 tons, and but 121 cars and 9 locomotives were contracted for last week. It is understood that the steel mills are now working at about 70 per cent of capacity, which will result in an increase in manufactured stocks. More general activity in foundry and steel making iron in the principal distributing districts was apparent last week. The volume of business is still very moderate, but it was evident that all interests did not cover their full requirements during the recent movement by Buffalo and Southern furnaces. Sales during the past week amounted to only about 85,000 tons, of which 40,000 tons were sold to Eastern consumers. The largest buyer of foundry iron was the International Steam Pump Co., which bought 5,200 tons, and automobile manufacturers at Detroit bought 10,000 tons. In the Central West more inquiries are coming out for basic and foundry iron for shipment into the Southwest, as well as into the Ohio Valley. Numerous small sales were reported from Southern furnaces at prices from $9.25 to $9.50 for No. 2 foundry at Birmingham. Contracts are pending for about 85,000 tons for domestic consumption and 100,000 tons for export. Italy has purchased pig iron and scrap recently in small lots. Undoubtedly the excessive freight rates for shipment across the ocean prevent larger orders from being consummated.

Quotations are as follows:

No. 2 X Northern Foundry, New York	$14.25 to $14.75
No. 2 X Northern Foundry, Buffalo	12.00 to 12.50
No. 2 Southern Foundry, Birmingham	9.25 to 9.50
No. 2 Southern Foundry, Cincinnati	12.25 to 13.00
No. 2 Southern Ohio Coke, Cincinnati	14.00 to 14.50
No. 2 Northern Foundry, Chicago	13.25 to 12.75

Copper.

Speculative transactions in warrants, through the London market were assigned for the cause of a further advance of copper last week. There was but little buying of Lake or electrolytic copper for domestic consumption. The export trade was also quiet and inquiries to cover manufacture of war material were light. Prices advanced steadily, however, and the week closed with electrolytic selling at 16⅛ for May and June delivery. The output of copper from both mines and smelters is estimated to be as high as 90 per cent of capacity, and, therefore, a disposition prevails to dispose of as much copper as possible for long future delivery, when the larger output will be effective in stopping further advance. Exports were 5,100 tons and imports only 700 tons.

Tin.

The course of the market in tin during the past week went as high as 59 cents and as low as 49 cents, and closed at 54 cents. This condition was brought about by the scarcity of spot and the prevailing uncertainty of available supplies for the trade in the United States. Authorities on the Metal Exchange at New York have taken up the issue with the British Admiralty and hope to obtain modification of British requirements, allowing freer trading for spot and nearby positions. The whole market is in a state of bewilderment. Offerings of prompt shipment from London were made at 38½ cents c. i. f. New York, but no guarantee accompanied the same. Tin purchased in London in February is still on the London docks, owing to delay in securing permits to make shipments. Altogether the market is very much muddled.

Lead.

A fair demand produced a firm market for lead and prices were further advanced. Spot is quoted at 4.20 cents in New York, and 4.15 cents, East St. Louis.

Spelter.

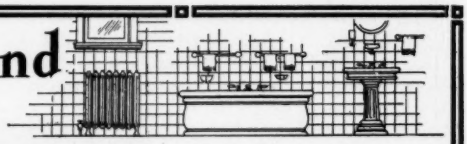
Spelter ruled higher and a stronger market prevailed with a good demand in the open market. Single car load lots of spot at New York were held at 9⅝ cents and 9½ cents at East St. Louis.

Old Metals.

New York dealers' buying prices are all nominal, as follows:

Strictly crucible copper	$13.00 to $13.25
Light copper	11.25 to 11.50
Uncrucibled heavy copper	12.75 to 13.25
Uncrucibled copper wire	12.75 to 13.25
Heavy brass	8.50 to 8.75
No. 1 brass turnings	8.37½ to 8.62½
New brass clippings	11.00 to 11.25
Cocks and faucets	9.12½ to 9.25
Light brass	7.00 to 7.25
Solder joints	8.00 to 8.25
Heavy Lead	3.65 to 3.70
Tea lead	3.25 to 3.35

Among the Plumbing and Heating Contractors



Illinois

Chicago and Vicinity.

G. Albin Nilson, of 329 North Clark Street, has been awarded the contract to install the plumbing, gas fitting and sewerage systems in the Terminal Building on Municipal Pier No. 2, at the foot of Illinois Street. Consideration $11,500. This is in addition to the original contract for approximately $75,000, that he now has under construction on the same pier.

James P. Coupland, a retired master plumber of Chicago, is spending a few weeks seeing the exposition at San Francisco. He is accompanied by Mrs. Coupland and expects to be away for several months.

Israel Muller, of 1012½ South Halsted Street, will install the plumbing in a six-flat family dwelling to be built at 4038-40 Dickens Avenue.

A two-flat apartment building, which will be erected at 7640 Morgan Street, will be equipped with plumbing fixtures by J. J. Kratz, of 7014 South Green Street. He will also install the heating system.

Segampel & Baldwin, of 173 West Washington Street, will install the heating system in a four-flat building to be erected at 4306-8 North Keeler Avenue.

T. J. O'Malley, of 308 West Oak Street, has recently been awarded the contract for installing the plumbing fixtures in three stores to be built at 6746-48 Sheridan Road. The heating system will be installed by Nelson Bros., of 3222 North Halsted Street.

Clyde E. Taylor, of 5612 South Halsted Street, will install the plumbing system in a residence to be erected on Bishop Street, between 80th and 81st Streets.

The plumbing fixtures for three residences to be built at 10505-9 South LaSalle Street, will be installed by Harry De Young of 10914 Wentworth Avenue.

The American Heating & Plumbing Corporation has been awarded the contract for installing the plumbing in two residences to be built at Highland Park. The heating system will be installed by the Phillips-Getschow Co., of 130 West Kinzie Street.

Samuel Smith, at one time secretary of the Chicago Association of Master Plumbers, has recently opened a plumbing shop at 4404 West Madison Street. He was formerly in the plumbing business in this city, but went into other lines of activity.

Other Cities in the State.

The plumbing system for an extensive one-story garage to be built at Madison Street and Oak Park Avenue, Oak Park, will be installed by Wm. Gawne, Jr., of 5812 West Madison Street, Chicago.

The contract for installing the plumbing in a $125,000 warehouse and mill, to be erected at Chester, Ill., has been awarded to J. Sheehan of 1012 Locust Street, St. Louis, Mo.

W. E. Bouillon, of Lincoln, Ill., has secured the contract for the plumbing and heating in the new Central school building in that city.

Iowa

The plumbing business in Iowa City, Ia., is very good this season and the plumbing establishments of George Kurz, Charles Shay and W. J. White have many good contracts on their books at better prices than have obtained for some time past. Plumbing and heating contractors have called a halt on former cut-throat methods of figuring jobs and are now securing better prices for their work.

Edward D. Walther, of the N. O. Nelson Mfg. Co., of St. Louis, Mo., has been calling on the plumbing trade in Iowa the past week or two and reports business the best it has been for years at this season. He has sold a great many carloads of supplies, all of which goes to prove that 1915 is making itself felt as a banner year. Mr. Walther usually works the Illinois territory, but is taking the place of A. W. Gifford, who has been sick for the past ten months.

Ohio

Cincinnati and Vicinity.

The Cincinnati Board of Education is asking for bids upon the work of extending the heating, ventilating and temperature-regulating system of the Pleasant Ridge School, on Montgomery Road, and for remodeling the boiler rooms and installing a new boiler and stack. Plans and specifications are in the hands of the business manager, C. W. Handman, at 511 West Court Street, Cincinnati, and bids will be received until noon, May 10th.

New Jersey

Perth Amboy.

A. J. Grothen, for many years identified with the trade in Perth Amboy, N. J., has started a business of his own, and is comfortably located in ample quarters at 40 Smith Street.

Klusendorf & Wodder have moved into better quarters at 242 New Brunswick Avenue. They were formerly located on Maple Street. This concern has just secured the plumbing contract for the new Carnegie Library addition.

Therkelson Bros. have the plumbing in a new residence on Prospect Street for H. Kaisen, and another on Meade Street for F. J. Rohr.

The Master Builders' Association of Perth Amboy, N. J., which includes the sanitarians of the city, is erecting its own home on Maple Street opposite the Federal Building. The property upon which the building will be located has been in the possession of the association for a number of years, and while the present attempt at

homebuilding will be a frame structure, it is but a starter, and a larger one will follow at a later date.

New York

New York City.

Charles Schleininger, of Stapleton, New York City, has the plumbing contract for the new Gans residence. This is the largest job on the island for some time past.

J. S. Murphy, of East Seventy-eighth Street, New York City, has secured the plumbing in the new Roulston factory at Second Avenue and Ninth Street, Brooklyn. He also has the plumbing in several elevated railroad stations on the new Fulton Street extension in Brooklyn.

At the recent Convention of the New York Master Plumbers' Association held at Syracuse.—From left to right: William J. Bapst, of the Trenton Potteries Co., Trenton, N. J., and Frank Merwin, of the Cooper Sanitary Mfg. Co., Philadelphia.

Staten Islanders Hold Open Meeting.

The Master Plumbers' Association, Richmond Branch, New York City, held an open meeting in the Association hall at Stapleton, on March 29th, at which both non-members and members were entertained with an interesting and instructive illustrated lecture on electric welded range boiler construction.

State President Thomas E. O'Brien and Secretary J. J. Dixon, of Brooklyn, both addressed the gathering on Organization, after which a supper was served. Over fifty were present, and several new members were added to the association's roster.

Kentucky

At Lexington, Ky., a new plumbing code ordinance was passed by the City Commisioners on March 31. On the same afternoon Mayor Cassidy affixed his signature to the ordinance which is now a law. The ordinance was warmly supported by the Board of Health and the Plumbers' Union, but received some opposition from the master plumbers who were divided on the matter. The mayor has advocated the passage of such a law for three years. The ordinance consists of forty-one typewritten pages, or 137 sections. The first thirty-three pages of the ordinance were read at a special meeting of the commissioners previous to the day on which the ordinance was passed. The remaining eight pages were read later. The Commissioner of Finance, K. G. Pulliam, opposed the measure at the first reading, but was ill and did not attend the second meeting. The code was drawn by Housing Inspector J. R. Richards, and is based on the Ohio State Plumbing Law. William B. Meehan, on behalf of the Plumbers' Union, thanked the Commissioners for passing the ordinance. The office of Plumbing Inspector at a salary of $125 per month will be created through the passage of the ordinance, under which no person will be allowed to work as a journeyman or master plumber until he has passed an examination and received a license, and no plumbing can be installed without a permit. The scale of prices charged for permits and inspections is as follows: A minimum fee of $2.50 for each permit and $1 for each inspection, excepting where the cost of the plumbing exceeds $1,000 where an additional fee of $1 for inspection and $1 for a permit will be charged for each thousand dollars or fraction thereof. A maximum fee of $2.50 including both permit and inspection will be charged when plumbing work consists of the installation of only an anti-freezing toilet.

A four thousand dollar courthouse job at Brooksville, Ky., is taking a portion of the time of H. W. Newman just now. He also has a $1,200 heating and plumbing contract on a new school house at Pitkin, La.

Massachusetts

Boston and Vicinity.

The campaign for new members recently inaugurated by the Master Plumbers' Association of Boston and Vicinity is meeting with good success. At each meeting of the association a number of new applications are turned in and the good work is still continuing. Secretary William A. Tucker is devoting considerable time to this missionary work and has been responsible for a number of the new members though many others are equally active in the work.

A new master plumbers' association is in process of formation at Newton where there are a number of plumbers that have not been affiliated with any association. Members of the executive board of the state association and other association enthusiasts have addressed the Newton men and considerable interest is said to have been aroused.

The annual dinner of the Massachusetts State Association of Master Plumbers to be held at the American House, Boston, on the evening of April 20th, promises to be a big success. The proposed plan of including the

ladies, an innovation this year, is generally approved and a large representation of wives and sweethearts is expected. Secretary Trow announces that Governor Walsh and Mayor Curley have both indicated their intentions of being present.

Two unusually attractive plumbing contracts in this section are being handled through the Boston office of the W. G. Cornell Co. The most extensive is the plumbing of the new buildings for the Massachusetts Institute of Technology which it is expected will require a year to install. The contract price is about $100,000. There are 14 separate buildings to be fitted up and more than 400 plumbing fixtures to be installed. In Worcester the Cornell Co. has a $50,000 contract for plumbing in the Park building, an eleven-story office structure especially designed for physicians and dentists. This company also recently completed the plumbing in the new 29-story tower of the custom house at Boston, a $60,000 contract.

The Legislative Committee on Mercantile Affairs has reported unfavorably on a bill introduced early in the session providing for the licensing of steamfitters in the same manner that plumbers are licensed. The report has been accepted in both branches thus killing the bill.

The J. Comer Jones Power & Pump Co. has opened a salesroom at 57 Batterymarch Street, Boston, where they will do a jobbing and retail business in water pumps both hand and power, engines, motors, wind mills, pipe and fittings. The company will make a specialty of the installation of water systems for country homes and institutions.

A creditors' petition in bankruptcy has been filed against the plumbing firm of Daniel E. Walsh Co., of 32 Broad Street, Boston. It is alleged that the company has admitted its inability to pay its debts.

Other Cities in the State.

Leslie Morrison has been re-elected inspector of plumbing in the city of Medford at a salary of $1,000 per year.

J. J. Cotter Co., heating and plumbing contractors of Springfield, have moved from 328 Dwight Street in that city to 20-24 Dwight Place. The company had been located on Dwight Street for 13 years and during that time has handled a large number of important contracts in Springfield and vicinity. The move to the new location was made necessary by the growth of business and the consequent need of more room.

William Schaffer & Co., who are engaged in the plumbing business at Wakefield, have taken quarters in the Woodman building at 17 Sweetser Street, Wakefield.

William H. Mitchell & Co., of Boston, have secured the contract for plumbing in connection with several additions to the college buildings at Amherst College.

The Knights of Pythias, of Brockton, are erecting a new $75,000 building in that city and the plumbing work in the structure will be done by J. J. Powers of the same city.

The Raddin Co., of Springfield has been awarded the contract for the plumbing to be installed in a new club house being erected in Longmeadow for the Springfield Turnverein.

George T. Swift, of Foxboro, is moving his plumbing business from Fales Place to a building on Centennial Street.

Reardon Bros., of Lynn, have been awarded the contract for plumbing in connection with the reconstruction of the Littlefield block in that city. This work will convert a lodging house to an apartment hotel with 42 suites. Work will be started immediately.

Thirty-nine candidates for plumbers' certificates were examined by the state board of plumbing examiners on a recent visit to Fall River.

George Frazier, of Westboro, has a contract for installing new plumbing in the town hall building at Shrewsbury.

Pennsylvania

Philadelphia and Vicinity.

S. Faith & Co., 2427 Pennsylvania Avenue, have been awarded the contract to install new plumbing in the Holmesburg County Jail. P. H. Johnson is the architect.

Flynn & Love, 1506 Samson Street, are making alterations in the building at the corner of Juniper and Market Streets, for the Globe Theater.

P. J. Hoft, 245 South Eighth Street, has been awarded the heating contract in property at 730 Spruce Street. Consideration $800.

J. G. Schamm, of Lancaster, has the contract to install plumbing and heating in seventeen houses for E. Dengle.

William Stumpf, of Lancaster, has the contract to install new plumbing and heating in the new Malta House on East King Street.

George B. Grey, 115 South Sixteenth Street, Philadelphia, has the contract to install 100 new bath rooms in the Strand Hotel, at Atlantic City, for George Allen.

The master plumbers of the "Keystone" state are among the most advanced in the science of practical sanitation. We take pleasure in presenting herewith a photo of the front view of the shop and employes of William W. Eckels, of Tyrone, Pa. The two tiny employes with

The Plumbing and Heating Establishment of Wm. W. Eckels at Tyrone, Pa.

the firepot and soldering irons are a couple of the smaller editions of the Eckels family. Mr. Eckels is one of the successful men of the trade in his section of the country. He has built up a reputation for efficiency in all work which he undertakes to do.

Edw. P. Stumpf, of Lancaster, has a contract to install the plumbing in a new apartment house for C. Rotwiler. This house will have 12 bath rooms.

James S. Lyons, of Ardmore, Pa., has just completed the plumbing and drainage work of Villa Maria Academy, a new Catholic institution for young girls at Frazier, Pa. John P. Smith Co., 17 North 7th Street, Philadelphia, did the heating, consisting of 30,000 square ft. of radiation.

Connecticut

Middletown and Vicinity.

J. B. and A. M. Coughlin, of Middletown, have disposed of their plumbing business to Cornelius Collins. Mr. Collins has been connected with the concern for the past 35 years and is an expert in all lines of plumbing work. He will continue to conduct a stove and housefurnishing store in connection with the plumbing business.

W. D. Dickson, of Westport, has been awarded the contract for the hot water heating and plumbing to be installed in the new residence of Channing P. Harris. He also has the contract for the water supply for the Charles Wolfe residence.

The Brooklyn Plumbing Co. has been awarded the contract for the plumbing to be installed in a new house being erected on Marley Place, Waterbury, for Frank Magro.

Work is progressing rapidly on a building in Danbury in which is to be located the plumbing establishment of Charles Moore. When work is completed the remodelled block will be a credit to the town.

Maine

Bangor and Vicinity.

At a meeting of the executive committee of the Maine Master Plumbers' Association held at the Bangor House, Bangor, on April 5th, plans for the annual midsummer outing of the association were discussed at considerable length. It was decided to hold the outing on Long Island in Portland Harbor but the date was not decided upon, this and other details being left to a sub-committee. Among the master plumbers present were: E. A. Goodhue, of Belfast; Fred Parkes, of Orono; P. A. Mahoney and Christopher Matthewson, of Portland; William Young, of Auburn; Fred E. Wheeler, of Woodfords; J. E. Donovan, of Winthrop and T. W. Kerrigan of Lewiston.

Plumbing Inspector Charles O. Morton of Portland reports that applications for permits are coming into his office very fast and cover all styles of installations. He considers general conditions much improved.

Proposals for the construction and all sub-contracts, including plumbing, heating, lighting fixtures, etc., for new steerage barracks and storehouses for the government quarantine station at Portland, are to be opened at the office of the supervising architect of the treasury department at Washington on April 20th. The main building is to be two stories high with basement and of 7,300 square feet ground area, and the storehouse one story with an area of 1,100 square feet.

The legislature which has just adjourned made a number of appropriations for plumbing, heating and similar work at state institutions. An appropriation was made providing for a $7,000 new heating plant and other work at the Healy Asylum, at Lewiston; $2,500 was appropriated for additional laundry equipment at the Maine School for the Feeble Minded, at Pownal, and $50,000, for the construction and equipment of a central kitchen and bakery at the same institution. $2,500 was appropriated for extending the water supply system and other improvements at the Maine Industrial School for Girls at Hallowell.

Announcement is made of the opening of a new steamfitting establishment at 44 Cross Street, Portland, the

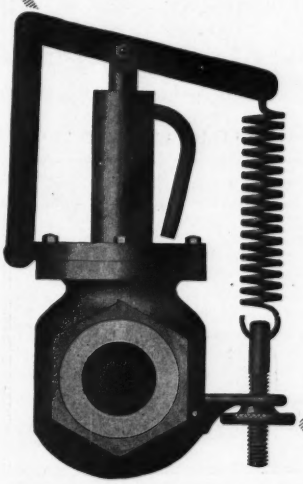
Eclipse

Specially Made

REGULATING VALVE

For Marine Service

Same construction as our No. 110 Reducing Valve. Fitted with a special spring instead of weight to prevent any jumping of lever, which throws steam pressure on the reduced side.



Works perfectly with pressure up to 200 lbs. — reducing anywhere from 5 to 60 lbs.

Tested and GUARANTEED

Write for Catalog "D."

HUGHSON Steam Specialty Company

5019-23 S. State St., Chicago.

Ever have a customer ask what to use to keep water closets clean? The answer is

Sani-Flush

It cleans entire bowl—the seen and unseen parts, and keeps it white as new, sanitary, odorless.

Cleans where a brush cannot reach.

No scrubbing, scouring or brushing.

SANI-FLUSH is perfectly safe to handle and will not injure bowl or connections.

When poured into the water it forms a solution which loosens the deposit in trap by chemical action.

There is good, easy money for you in handling SANI-FLUSH. Sells itself. Universally advertised. Write for details.

Advertised in national magazines having a combined circulation of over Ten Million Copies.

The Hygienic Products Co.

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The Bilge Pump With The Long Life

The "Chicago" Automatic Electric Bilge Pump

involves new principles that make for economy, service and lasting quality.

Get the details NOW before you install another bilge pump.

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Chicago Pump Company
903 W. Lake St. Chicago

Crawford Combination Vise

Once Used — Always Used

Read This Letter from a Satisfied User:

Toledo, Ohio, March 4, 1915.

Joseph H. Young Co.,
80-82 High St., Boston, Mass.

Gentlemen:—

Some time ago we bought two Crawford Combination Vises from you, and now find it necessary to buy another one, due to the fact that some one took a decided liking to one of ours and stole it within ten minutes after we put it on the job.

We think that this speaks fairly well for the vise.

Please send us another one at once and oblige.

Yours very truly,
THOS. KEWLEY & SON.

One trial will convince you. Write for prices.

Jos. H. Young Co.
82 High St. Boston, Mass.

Flush Balls At Factory Prices

As good as the best at a price much lower than the rest.

The Schild Tank Ball

Made of best quality live rubber.

Write for our *Special Offer* of 6 doz. balls direct to you by parcel post.

THE SCHILD SPECIALTY CO.
1030 St. Clair Ave. N. E. - - - - Cleveland, Ohio

Peters Electric House Force Pump

For use with Water Supply Systems

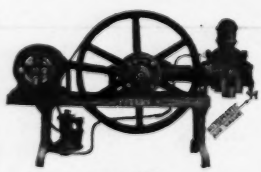


Fig. 195

The pump that gives satisfaction and makes your customers recommend you.

Complete in every detail when you receive it.

Write for prices and particulars.

PETERS PUMP CO., Kewanee, Ill.

Established 1890

firm name of which is Kezar & Stoddard. Both members of the firm have been for many years associated with W. W. Cameron, of that city and are experts in their line.

Washington

The Adams Engineering Co., Empress Building, Seattle, has completed plans and specifications for the heating and ventilating system in the new building of the Commercial School at Everett and are now working on plans for the heating and ventilating of the addition to the Monroe School at the same place. They also have plans well under way for the complete heating and ventilating systems, vacuum cleaning plant, plumbing and electric sewer lifts for the new theatre building of the Osran Amusement Co. at Bremerton and have about completed plans for the ventilation of the Washington Natatorium at Seattle.

Dupar Bros., of Bellingham, have secured the contract for and will soon begin work on the steam heating plant for the Lowell grammar school building. The value of the contract is $8,500. This firm has just completed its first year in Bellingham, having formerly been located in Seattle.

The Tacoma Central Steam Heating Co. having secured a decision from the Superior Court declaring its franchise in Tacoma valid, the company will at once begin work on plans for the installation of its proposed system.

Guiles & Schlosser, of Olympia, have been awarded the contract for both the plumbing and heating in the two-story, 24 by 90 ft. concrete, tile and brick building to be erected in Olympia for the Olympia National Bank, by the Hurley-Mason Construction Co., of Tacoma. The structure will be located on the corner of Main and Fifth Streets and will cost complete $50,000.

California

San Francisco.

Plumbers report that the trade has dropped off more or less, and that there is now very little doing in the way of new contracts. Building is rather slack, but it is claimed that some large work is in sight, though most of the better class of work that seems really certain is of a public nature.

There is a pretty fair movement in cast iron pipe, the largest contract in sight being the pipe for the municipal water plant of Sacramento. Bids for 400,000 feet of cast iron pipe, ranging from four to twenty inches in diameter, and for about 40,000 feet of riveted steel pipe of large dimensions for the Sacramento job, are now being submitted. The steel pipe trade is in pretty fair shape. Stocks are not heavy, but of sufficient size to meet requirements. Orders with the mills are about as heretofore.

The Red Front Plumbing & Hardware Co. has been incorporated in San Francisco with a capital stock of $10,000. F. J. Price is the principal stockholder, and the others are O. B. Price and W. C. Middleton.

Contracts for the Sidney M. Ehrman residence at 2970 Broadway were let this week. The plumbing contract went to the Frederick W. Snook Co. for $3,988; and the heating and ventilating contract to the Atlas Heating & Ventilating Co. for $2,485.

Los Angeles.

The end of March shows an improvement in building activity all along the line and better feeling, regarding the balance of the year's business is felt in every branch of the building business. Building permits for March are estimated at 825 representing a total valuation of approximately $1,200,000 against a valuation of last month of $560,000 and $860,000 in January. One form of build-operation in Los Angeles which will probably exceed any in the United States, is the erection of public school buildings in 1915.

The sum of $6,500,000 has been voted by the people to provide new school buildings. Instead of placing these bonds on the market in a lump sum, they have been separated and are disposed of as they are most needed. The success of the plan is evidenced by the fact that up to date plans have been ordered and bonds sold for twenty schools with every prospect that others will be authorized in the near future.

Manufacturers of plumbing and heating appliances suitable for school building construction will find Los Angeles, for some years, a very fruitful field for the best they have.

Other Cities in the State.

The plumbing establishments of William Murphy and G. H. Braden in Hollister have been consolidated, and the business will be operated under the name of Murphy & Braden.

The Siebert Co. has secured the heating contract for the new Claremont Avenue school in Berkeley on its bid of $3,922.

Plans are now being prepared for the four-story and basement Scottish Rites Temple to be erected shortly in Sacramento. The building will be of Class A construction and will cost about $100,000.

Brynelson & Bull, who are engaged in the plumbing business in Sunnyvale, are preparing to move to larger and better quarters in a few days.

E. L. Roberts, of Healdsburgh, is preparing to move his plumbing business to Chualar, Cal.

The Doak Gas Engine Co., of Oakland, has been awarded a contract for the installation of an auxiliary pumping plant for the municipal waterworks plant at Reedley.

The plumbing firm of Brown & Stoval, located at Santa Ana, has been dissolved. G. W. Stoval will continue the business under his own name.

The bid of John Stock & Sons, of San Jose, has been accepted for the installation of an automatic underground sprinkling system in North Fifth Street. Consideration $346.

H. Deach and F. P. Allen have formed a partnership and will conduct a plumbing business at 257 Fifteenth Street, Richmond.

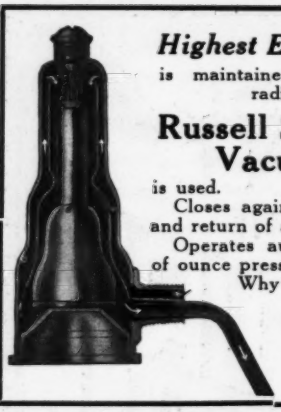
Preliminary plans have been received at the Navy Yard at Vallejo for two miles of pipe line to connect two new fuel tanks now being erected.

Foss & Jones, E. Union Street, Pasadena, have a very fine plumbing contract at Coronado Beach for Gale Thompson, of Chicago.

C. L. Bell, 1159 Echo Park Avenue, has a contract at Los Alamedoes Bay for the plumbing of several residences.

The Town Trustees of Winters have advertised for bids for the furnishing and placing of a 100,000 gallon steel tank and for a number of meters for the city water system.

Your Opportunity
to enlarge your Water Heater sales and Increase your Profits.
In suburban allotments, country homes and farms — especially dairy farms — where hot water is needed.
The "ACME" Gasoline Water Heater
will give the same service as a gas heater.
We will co-operate with you in handling this business.
Write us on your own stationery for particulars and prices.
The Acme Specialty Mfg. Co.
Manufacturers of
Gas and Gasoline Water Heaters
W. W. STATION TOLEDO, OHIO



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is maintained in every section of radiator where the

Russell Syphon Air and Vacuum Valve

is used.
Closes against loss of steam, water and return of air.
Operates automatically on fraction of ounce pressure.
Why not investigate?

W. A. Russell & Company
63 W. 37th Street
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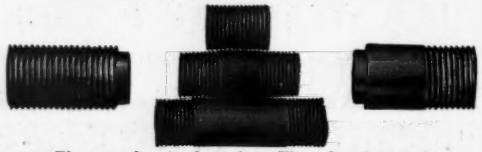
Genuine Wrought Iron Nipples
Manufactured exclusively from
BYERS' WROUGHT IRON PIPE



Electro-galvanized nipples. Threads galvanized.
Our Nipples will benefit you by giving better satisfaction to your customers.
Special Nipples for all purposes.
Write for catalog and special discount.
CALDWELL MFG. & SUPPLY CO., 5022 Gloster St. Pittsburgh, Pa.

The American No. 32 Torch

possesses many advantages over other torches. 100 per cent more heating power.

SPECIAL FEATURES

Filling lid on top. Regulating valve—Concave bottom—needle valve self-cleaning—Pump rod does not force back—Can be used in any position.
Write for prices and circulars.

OPTIMUS MFG. CO.
Stockholm, Sweden
HENRY W. PEABODY & CO.,
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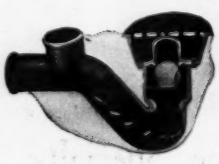
Distributors for U. S. A. and Canada

Our No. 2 Trap with Vent or Cleanout Connection

Insist on Miller's "Safety First" Traps



Can also be furnished with square pan

Ask your jobber for prices, etc.

MILLER FOUNDRY & SPECIALTY CO.
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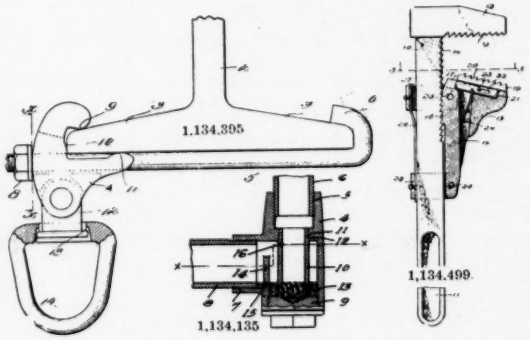
Patents

Heating Department.

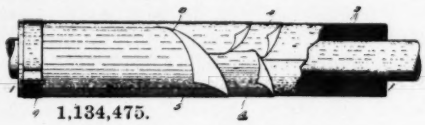
1,134,395. Pipe-Hanger. Albert John Loepsinger, Providence, R. I., assignor to General Fire Extinguisher Company, Providence, R. I., a Corporation of New York. A pipe hanger comprising a jaw member shaped to provide three projecting bearing surfaces adapted to bear simultaneously upon the top, bottom and one edge of an I-beam flange having any one of several thicknesses and hold said jaw rigidly and against rocking in whatever position it may assume, a co-operating clamping member adapted to engage the I-beam and passing through a vertical slot in the jaw member to permit adjustment of parts to the thickness of said I-beam flange, and a pipe supporting device pivotally depending from said jaw member.

1,134,135. Seal for Steam-Radiators. James L. Judge, Minneapolis, Minn. The combination, with a radiator and a return pipe therefor, of a casing having an open upper end connected with the radiator and a side opening connected with said return pipe, a tube arranged in said casing having a comparatively large opening in its lower portion for the passage of water of condensation from said tube to said return pipe, and a comparatively small opening in its upper portion for the passage of air, said casing having a trap for collecting the water of condensation and sealing said large opening against the passage of steam.

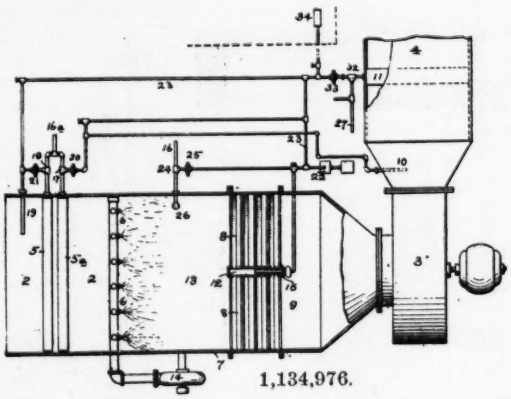


1,134,499. Pipe-Wrench. Armidos J. Aube, Sault Ste. Marie, Mich. A wrench including a stock provided with a fixed jaw and having teeth formed thereon, a movable jaw slidably mounted upon the stock and provided with teeth adjacent the inner extremity thereof, a spring operatively connected to the movable jaw and adapted to normally hold the teeth thereof in engagement with the teeth of the stock, a grip member slidably mounted upon the movable jaw, said grip member having its working face inclined away from the working face of the fixed jaw and being movable toward said jaw to decrease the angle between the jaws, and a spring carried by the movable jaw and adapted to normally hold the grip member at the limit of its outward movement away from the fixed jaw, the movable jaw being shiftable against the tension of said first mentioned spring to disengage the teeth thereof from the teeth of the stock and simultaneously increase the angle between the jaws.

1,134,475. Pipe-Covering. William A. Macan, Ridley Park, Pa., assignor to Ehret Magnesia Manufacturing Company, Valley Forge, Pa., a Corporation of Pennsylvania. As a new article of manufacture a sectional pipe covering embracing a pair of semi-cylinders of non-conductive material having a flexible jacket of fabric for binding the same together and an outer jacket of fine mesh fabric exteriorly coated, with an elastic gum-like substance permanently applied to the flexible jacket at the time of manufacturing said sectional covering, the edges or flaps of said flexible jacket and said outer jacket being free for later application.



1,134,475.



1,134,976.

1,134,976. Means for Humidifying Air. William G. R. Braemer and Samuel C. Bloom, Camden, N. J., assignors to Warren Webster & Company, a Corporation of New Jersey. A humidifying apparatus, comprising a tubular passage open at one end to the atmosphere, combined with a blower for sucking on the contents of the passage at the other end, means for supplying an aqueous vapor to the air passing through the passage, a tank for receiving the surplus water from the vapor, means for circulating the water from the tank to the means to supply the aqueous vapor, eliminators through which the air passes for removing the suspended moisture therefrom, means for supplying steam to the water in the tank, and a thermostat arranged to be acted upon by the eliminator water for controlling the supply of steam to the water in the tank.

Plumbing Department.

134,092. Pipe-Joint. Edwin Bahr, New York, N. Y. In combination with a pair of alined pipe members such as a threaded pipe and connection internally threaded so as to fit the pipe, of a coupling nipple having its shank similar to the line pipe and threaded at the rear end to fit the line connection, the coupling nipple having its other end enlarged and externally threaded, such enlargement tapering inwardly, a coupling sleeve having an internal thread tapering from one end to the other and adapted to engage the said enlarged end to the coupling nipple to lock thereon at its smaller end portion, and an extension sleeve having a reduced end whereby inner and outer shoulders are provided at its middle portion for engagement respectively with the said pipe member and said coupling nipple, said extension sleeve having its reduced portion tapering toward the end thereof and ex-

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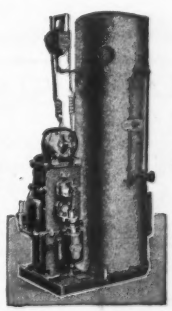

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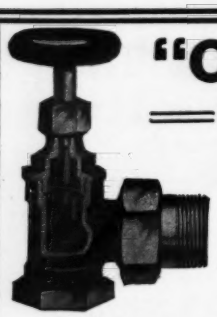

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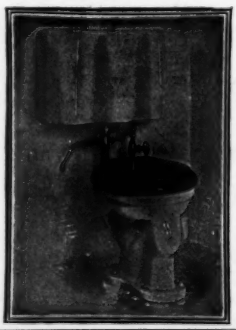
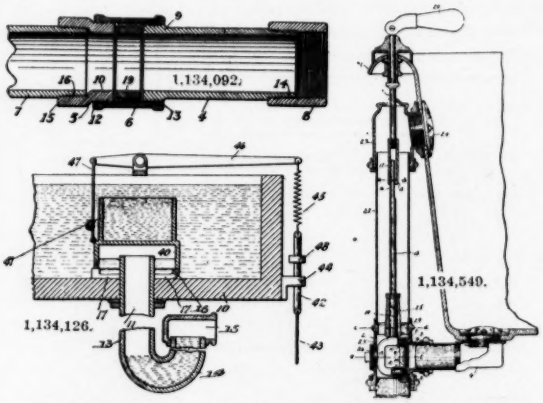


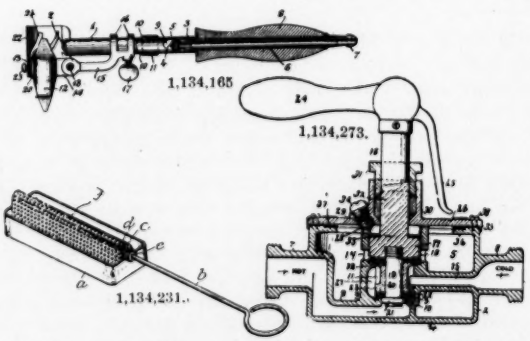
ECONOMY

ternally threaded to engage in the larger end of the threaded bore of the coupling sleeve, said extension sleeve having its bore threaded at the larger end portion for engagement with the said threaded pipe member, said extension sleeve having the bore of the reduced portion in alinement with the said pipe member and with the bore of the said coupling nipple.

1,134,126. Flush-Tank. George T. Hanchett, New York, N. Y., assignor to S. Fischer Miller, South Orange, N. J. The combination with a flush tank having a discharge outlet, a trap leading therefrom, and an air trapping bell inclosing said outlet and normally submerged in the liquid within the tank; manually operated means comprising a yielding transmission connection and a stop, adapted to transmit a limited force sufficient to move said bell when submerged to a predetermined level for releasing the liquid, but insufficient to move said bell when not submerged to said predetermined level.



1,134,549. Waste-Pipe Valve for Bath-Tubs. William G. Newton, New Haven, Conn., assignor to The Peck Bros. & Co., New Haven, Conn., a Corporation. A waste pipe valve for bath tubs comprising a circular valve adapted to be connected with the waste at the bottom of the tub, said valve casing provided with a circular valve seat, a segmental valve in said casing bearing on said seat, said valve formed with two inwardly projecting sockets, a yoke provided with two studs entering said sockets, said yoke formed with an upwardly projecting arm, a guide sleeve through which said arm extends, a valve stem connected with said arm, an operating handle provided with a handle stem, and means for coupling the handle stem with the valve stem said coupling having sliding connections with one of said stems.

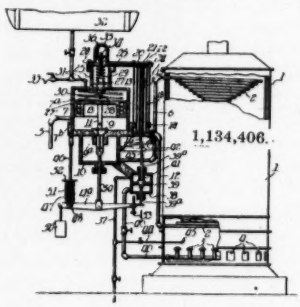


1,134,165. Soldering-Iron. Charles Stichler, Philadelphia, Pa. A self-heating soldering iron comprising a burner-tube adapted for connection with a source of fuel supply, a support movable lengthwise of said tube, a

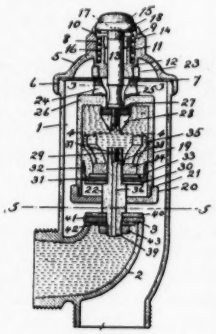
soldering-bit pivotally mounted on said support to swing in a plane passing lengthwise through said burner tube and means movable with said bit for confining the flames and heat from said burner tube adjacent to said bit.

1,134,231. Torch. Martin Rocksted, Chicago, Ill., assignor to The Imperial Brass Manufacturing Company, Chicago, Ill., a Corporation of Illinois. In a torch, the combination with a trough generally rectangular in its cross section, of a perforated metallic screen therein, of a generally inverted U-shape in the same cross section, placed in the bottom of the trough, and a filling of loose asbestos fiber for the screen.

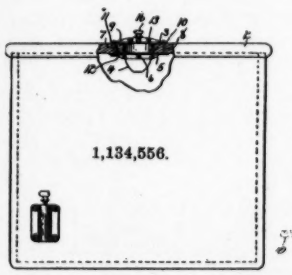
1,134,273. Hot and Cold Water Mixing Valve. Bernard H. Jansen, Cleveland, Ohio. A mixing valve comprising a body having a cylindrical core centrally thereof and a circular chamber about said core provided with walled water-intake passages extending through said chamber to the core and provided with a discharge passage from said chamber, said core having differential bores with screw threads and discharge openings in its upper end and a pair of valve seats at different elevations therein, in combination with a screw-threaded valve stem and a pair of valve members therewith to engage said seats and provided each with a valve plunger to snugly fit the correspondingly differential bore.



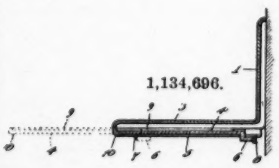
1,134,406.



1,134,488.



1,134,556.



1,134,696.

1,134,406. Automatic Water-Heater. John E. Osmer, Chicago, Ill., assignor to Humphrey Company, Kalamazoo, Mich. The combination, with a water heater, of a valve casing communicating therewith; a piston slidably mounted in said casing; said casing having an inlet and an outlet for cold water at one side of said piston; said casing having an inlet and an outlet for hot water at the opposite side of said piston; valves controlling certain of said inlets and outlets, said valves being operable by said piston; a fuel valve; and a connection between one of the first mentioned valves and said fuel valve.

1,134,488. Flushing-Valve. Edro Richardson, Baltimore, Md., assignor of one-half to Thomas R. Jenkins, Jr., Baltimore, Md. In a flushing valve the combination with a shell having an outlet in its lower end and an upturned water-inlet above said outlet, of a detachable cap at the upper end of the shell, said cap having a central depending base; a cylinder sustained by the depending base of the cap; a piston in said cylinder and having a

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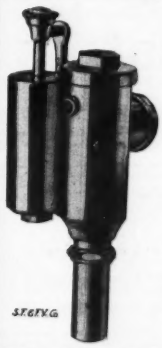

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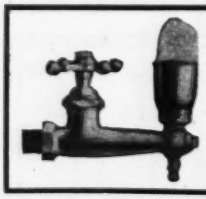
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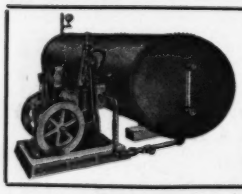
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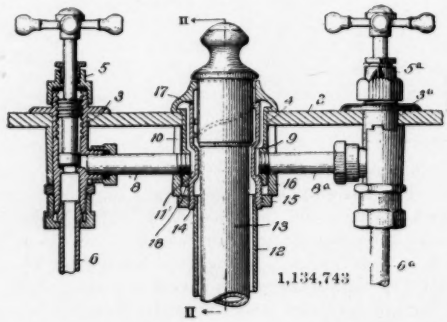
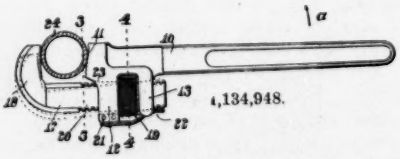
stem whose upper end is reduced in size; and a tripod-shaped head on the reduced end of the stem and having its arms in sliding contact with the interior wall of the cylinder when the piston is making its movement.

1,134,556. Water-Closet Tank. Adolph C. Recker, Oakville, Conn., assignor to Waterbury Mfg. Co., Waterbury, Conn., a Corporation. The combination with a water closet tank, of a cover formed with an opening, a disinfectant-holder secured beneath said opening, said holder formed with perforations near its upper end through which air may be drawn by the discharge of the water from the tank, a perforated cap located over the said opening in the cover, and means for closing the perforations in said cap.

1,134,696. Kitchen-Sink. Mary Nemec, Chicago, Ill. The combination with a sink having a permanent shelf, of guide flanges at the under side of said permanent shelf; a supplemental shelf slidably supported by said flanges to permit of said supplemental shelf being slid forwardly to extend from said permanent shelf; and a downwardly offset flange at the rear end of said supplemental shelf, the lateral edges of said shelf at said flange being cut away to permit the ends of said flange engaging under said guide flanges, substantially as described.

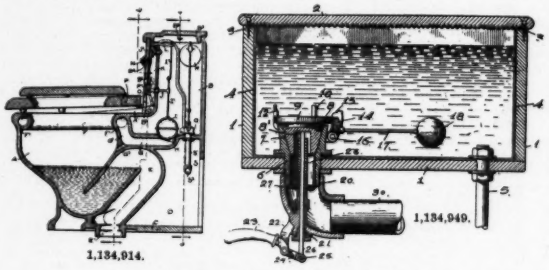
1,134,743. Lavatory-Fitting. William W. Jackson, Toronto, Ontario, Canada, assignor to Standard Sanitary Manufacturing Company, Pittsburgh, Pa., a Corporation of New Jersey. The combination of a basin with a horizontal flange having an opening therethrough, an annular fitting member extending vertically through said opening and comprising inner and outer cylindrical walls made of separate pieces and forming an annular chamber, said chamber extending through and below the basin flange-opening and communicating above said opening with a single discharge spout leading into the basin, supply connections opening into oppositely disposed sides of said chamber and adapted to discharge their contents against the inner wall thereof, a ring depending from said member and screw-threaded interiorly and exteriorly, a pipe attached to the interior threads of said ring and forming with the inner wall of said fitting member a valve stem casing, a locking nut engaging the outer threads of said ring, and a spacing sleeve between said nut, and the lower surface of said flange.





1,134,948. Wrench. Harry C. Earle, Boston, Mass., assignor to Walworth Manufacturing Company, Boston, Mass., a Corporation of Massachusetts. In a device of the class described, the combination of a body portion having

an integral fixed jaw and two lateral projections slotted so as to form a curved surface at the bottom of the slots, a movable jaw having a threaded shank passing through said slots, an adjusting nut on the shank loosely engaged by said projections, a filling member to close the slot in the projection nearer the jaws and form a passage in which said shank is free to move toward and from said curved bottom, and a spring mounted on said member and constructed so that its free end will be positioned in the slot of the projection farther from the jaws and bear on the outer face of said threaded shank.



1,134,914. Water-Closet. Frank Schuh, Albany, N. Y. A water closet provided with a bowl and a water supply tank integral with the bowl, the bowl having an integral sealed outlet and an integral flushing rim, and the tank having its bottom below the rim of the bowl and provided with a valve seat therein, a channel being formed between the bottom of the tank and the outlet of the bowl, and having an upwardly projecting extension, said channel leading from the rim of the bowl to the valve seat and provided with an opening at the base of its extension leading into the bowl.

1,134,949. Valve for Flushing-Tanks. Ernest Ferran, San Francisco, Cal. In apparatus of the class described, the combination with a valve seat, of vertical lugs upstanding from said seat, one of the lugs having a shoulder near the upper end thereof, a valve for co-operating with said seat and having an annular flange, means for lifting said valve, and a float operated latch pivoted at its lower end and having a shoulder near its upper end, the said latch being arranged to normally thrust against the side of the flange and to move the shoulder in the latch underneath said flange and to move the flange onto the seat on the lugs when the valve is raised.

A LIST OF PROSPECTIVE CUSTOMERS.

From time to time master plumbers and fitters seek information on how to secure lists of prospective customers. The editor of "Domestic Engineering" is in receipt of a recent letter from Wesley A. Fink which throws some valuable light on the subject. Mr. Fink writes in part:

"The plumber is not particularly interested in getting the names of people who are not house-owners, and heretofore most lists have been secured from the publishers of city directories, but their charges are often prohibitory for the average plumber. In talking the matter over with a plumber I was advised that he found that the assessor's lists in the office of the receiver of taxes gave the list of house owners, and the lists were arranged by districts or localities. The plumber can go to the tax office and copy such lists without expense to himself, other than the time involved in so doing."

New York, N. Y.—A petition in bankruptcy has been filed against Osborne-Rea & Co., heating engineers at 241-243 West Forty-first Street in this city.

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have been selected to furnish the hot water at the Panama-Pacific International Exposition, is conclusive proof that the "HOFFMAN" possesses **Real Established Merit.**

The Latest Improved "HOFFMAN" is the most efficient and economical automatic gas water heater made.

Costs less than many inferior kinds, and does more.

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Iron City Child's Bath

Size 24x33", with apron, and mounted on a pedestal.

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Iron City Sanitary Mfg. Co.
Pittsburgh, Pa.

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Advertisements under this heading 4 cents per word per issue, address included. Send cash with order. To insure insertion copy should be received not later than Wednesday afternoon.

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WANTED — A-NO. 1 FIRST CLASS salesman for Columbus territory, including Dayton, Cincinnati and outlying smaller towns. Give age, experience and references. Union Radiator Co., Johnstown, Pa. 4-3; 10; 17

WANTED—BY MANUFACTURER, COMmission salesman to sell plumbers' enameledware to plumbers in Pittsburgh territory, out about as far as Youngstown, Ohio, all around, not including Pittsburgh. Prefer man now traveling this territory and handling one or more other lines. Address 2152, care "Domestic Engineering," Chicago. 4-17

WANTED—SALESMEN CALLING ON plumbers, at liberty to handle good paying side line, on commission, in Northern Illinois and Chicago, lower Michigan and Detroit, Western Pennsylvania and Pittsburgh territories. Write fully present connections, territory traveled, age, experience, lines now handling, references. Address 2151, care "Domestic Engineering," Chicago. 4-17

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WANTED—TO REPRESENT MANUFACturers of plumbing and mill supplies, in Pennsylvania, Maryland and Virginia. Only articles of merit considered. Address 2150, care "Domestic Engineering," Chicago. 4-10; 17; 24.

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FOR SALE—A LIVE PROPOSITION. Other interests compel me to sell my old established plumbing and heating business. Modernly equipped. A money maker for any bright, energetic man. Write for particulars. Terms. Address 2154, care "Domestic Engineering," Chicago. 4-17; 24

FOR SALE—HERE IS YOUR OPPORtunity to buy well established plumbing and heating business in Centralia, Washington. Invoice. Address R. G., Centralia, Washington. 4-17

FOR SALE—PLUMBING AND ELECtric establishment. Live town. Lots of plumbing and electric work. Business looking good this year. Fine location. Address 2156, "Domestic Engineering," Chicago. 4-17; 24

FOR SALE—BUSINESS FOR SALE ON account of sickness. Stock about $3,500, including plumbing and heating goods, stoves and ranges. Established two years. Business amounted to $15,000 per year. Fine prospect for more business this year. Look this up if you want a good location. Don't write unless you mean business. J. H. Kiniry, P. & H. Co., Beloit, Kansas. 4-10; 17.

Miscellaneous.

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Government Proposals.

TREASURY DEPARTMENT, SUPERVISing Architect's Office, Washington, D. C., March 31, 1915.—Sealed proposals will be opened in this office at 3 p. m., April 30, 1915, for new plumbing fixtures, etc., in the United States courthouse, post office, etc., at Louisville, Ky., in accordance with specification, copies of which may be obtained at this office, or at the office of the custodian, Louisville, Ky., in the discretion of the Supervising Architect, O. Wenderoth, Supervising Architect. 4-10; 17.

PROPOSALS FOR INDIAN SUPPLIES.—Department of the Interior, Office of Indian Affairs, Washington, D. C., March 17, 1915. Sealed proposals, plainly marked on the outside of the sealed envelope: "Proposal for furniture, etc., as the case may be, and addressed to the "Commissioner of Indian Affairs, Third and Spruce Streets, St. Louis, Mo.," will be received until 2 o'clock p. m. of Thursday, May 13, 1915, and then opened, for furnishing the Indian Service with rolled barley, beef, mutton, pork, corn, furniture, harness, leather, paints, oils, glass, tinware, stoves, hardware, boots and shoes, medical supplies, etc. Schedules giving all necessary information for bidders will be furnished upon application to the Indian Office, Washington, D. C., and the U. S. Indian Warehouses at New York City, Chicago, Omaha, St. Louis and San Francisco. The department reserves the right to reject any and all bids, or any part of any bid. Cato Sells, Commissioner. 4-10; 17; 24.

TREASURY DEPARTMENT, SUPERvising Architect's Office, Washington, D. C., April 14, 1915.—Sealed proposals will be opened in this office at 3 p. m., May 15, 1915, for extension and remodeling of plumbing, etc., in the United States post office and courthouse at Auburn, N. Y., in accordance with drawings and specification, copies of which may be obtained at this office, or at the office of the custodian, Auburn, N. Y., in the discretion of the Supervising Architect. O. Wenderoth, Supervising Architect. 4-17:24

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